

HERITAGE KEEPSAKE



Shyamalkanti Chakravarti



**UNIVERSITY OF CALCUTTA
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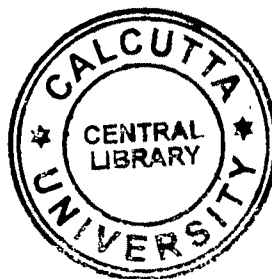
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by

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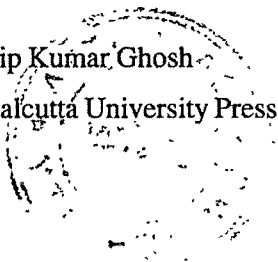
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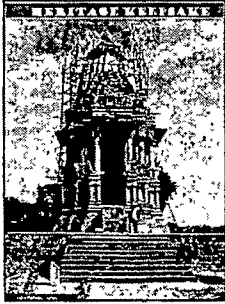
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The Book

Heritage is that which is inherited from past generations, maintained in the present and bestowed for the benefit of future generations. The term also denotes manifold meanings, such as, inheritance, birthright, legacy, tradition, culture, history and past. It has become necessary to document, study, preserve and popularize the heritage of the countries facing threats from various sources. Ancient monuments, objects of art and craft, oral tradition, written literature as also the natural environment-all form part of a nation's heritage. Heritage, therefore, as a precious item should be kept alive in memory of the person or a nation who originally owned it through generations. Keeping the heritage in tact and safe for the present and future involves multi-dimensional considerations. Promoting heritage education should be the motto of a nation rich in archaeological wealth and indigenous traditions. A concerted effort is therefore needed to keep our heritage alive.

The monograph discusses topics like definition of heritage, its conservation, variations of tangible, intangible and mixed heritage, the world heritage sites in India including the elaborate account of the heritage sites in the state, the documentary heritage upkeep, management of heritage, laws protecting cultural heritage, heritage in the sky and under water as also the heritage at risk and its recovery.

Illustrated with a good number of photographs the book is equally indispensable for the students, scholars and inquisitive readers.

The Author

An Indologist of wide acclaim and a scholar specializing in art, iconography, epigraphic studies and museology, Dr. Chakravarti had his debut in the museum world in 1966 and finally shot up to the exalted position of the Director-Secretary, Indian Museum (1997-2004). He had his UNESCO training in museum method in Japan (1983) and Museum Management training organized by Govt. of India at the Administrative Staff College of India, Hyderabad (1994).

Dr Chakravarti held additional charge of the Director, National Library of India (2001-2003) and had assumed the office of the Honorary Executive Secretary of the Gurusaday Museum of Folk Art (1995-2004). He was also awarded the Senior Visiting Fellowship at the National Gallery of Art, Washington

DC by the Smithsonian Institute, USA (2004); the Fellowship in Museology of the Rabindra Bharati University (2005-06) and the Fellowship in Museology of the University of Calcutta (2010-2011).

He has been elected Chairman, Indian National Committee of the International Council of Museums (ICOM) for two terms during 2000-2006. Presently he is the Chairman, Bhaskar Bhavan Administration & Maintenance Trust; Expert Advisor, Museum Committee Rabindra Bharati University; Trustee, Kolkata International Foundation for Arts, Literature & Culture; Member, Managing Committee, Gandhi Museum, Barrackpore.

He has authored many valuable titles which include *Patralekha: romance of letter-writing in Indian art and literature*; *Descriptive catalogue of Prakrit and Sanskrit inscriptions in the Indian Museum*; *Wood and metal effigies of Nagaland*; *Wood carvings in the Gurusaday Museum*; *Kalighat paintings in the Gurusaday Museum*; *Bengal terracottas in the Indian Museum*; *The Bamiyan Buddhas*; *The Festival of Durga, Destination Museum. and the ghats of Varanasi* He has the credit of editing the updated and annotated volume of the history of the *Indian Museum (1814-2004)*; *Vinayatoshini*-a compilation of essays on Indology, art and alternative medicine; *Select work of Benoytosh Bhattacharya*; *Raja Rajendralala Mitra-a centenary obit* and *Mahatma Gandhi in mural*.

His Bengali books include *Jaccho kothay jadughare*; *Patravilas*; *Navanarikunjara*; *Mummy rahasya*; *Rigveder kavyanatak*; *Boier Bari Belvedere*, *Ajana Bamiyan*; *Buddha deshe deshe*, *Jadugarer gahare ghare*, *Saat rajyer mummy*, *Abanindrananth Thakur*; *Chitre barnamala o adiparver sketch book*

Preface

The monograph contains the modified version of the lectures delivered by the author as Visiting Fellow in Museology at the Calcutta University for the session 2010-2011.

The study of cultural and natural heritage has been undertaken as an academic subject in the educational institutions of various countries in the world. Even the participation in the sustainable management of immovable cultural heritage sites is aimed at for the university students in the European nations. It has also become necessary to document, study, preserve and popularize the heritage of the countries facing threats from various sources. The safeguarding and development of natural and cultural assets, as well as their presentation and dissemination to the public remain important tasks for present and future generations.

It is with this view in mind the contents of the monograph were selected to elaborate the topics like the definition of heritage, its conservation, the world heritage sites in India, the documentary heritage upkeep, managing cultural heritage, laws protecting cultural heritage, heritage in the sky and under water as also the heritage at risk and its recovery. It is hoped that the monograph may be of some help to provide recommendations for policies dealing with matters of cultural and natural heritage in the country.

The author is beholden to the authorities of the University of Calcutta, specially the Vice Chancellor, Professor Suranjan Das for kindly agreeing to publish the series of the Fellowship lectures.

I express my gratitude to Associate Professor Supreo Chanda, Former Head of the Department of Museology for inviting me to deliver the Fellowship lectures. My thanks are also due to Professors Dr. Sachindranath Bhattacharya, Dr. Chhanda Das, and Dr. Indrani Bhattacharya for facilitating me with ungrudging cooperation.

The author and the publisher are grateful to various national and international institutions and publishing concerns as also to the contributors to the Internet for making available the relevant information and visuals for the monograph.

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HERITAGE DEFINED

Heritage is that which is *inherited* from past generations, maintained in the present and bestowed for the benefit of future generations. Cultural heritage is the legacy of physical artifacts and intangible attributes of a group or society. Heritage can also include cultural landscapes (natural features that may have cultural attributes). The term 'natural heritage', derived from 'natural inheritance', pre-dates the term 'biodiversity', though it is a less scientific term and more easily comprehended in some ways by the wider audience interested in conservation biology.

Natural heritage is also an important part of a culture, encompassing the countryside and natural environment, including flora and fauna, scientifically known as biodiversity, geology and landforms or geodiversity, Natural heritage is the legacy of natural objects.

The word 'Heritage' could be better replaced by a Sanskrit term '*aitihya*'. It is conjectured that '*itihasa*' by which the word 'History' is known in India, is construed from the phrase *Iti ha asa* which literally means—'so indeed it was' or 'thus verily happened'. Here, the idea of history is connected to the idea of time. The derivative meaning of *aitihya*, a noun form of *iti ha* is, therefore, 'this indeed'! It boils down to signify an object belonging to that reality of the past created by either man or nature, which draws one's attraction. The term 'Heritage' also denotes manifold meanings, such as, inheritance, birthright, legacy, tradition, culture, history and past. However, the most popularly accepted sense of the term indicates the valued things such as historic buildings that have been passed down from previous generations.

The nearest English word for *samskriti* is 'culture' derived from the root *kri* (to act) with the prefix *sam* meaning 'entire'. *Samskriti*, therefore, in Indian context signifies human activity in its entirety. In another way, culture is power, as culture heightens the skills of an individual and a society in its totality in all walks of life. It is power because it is by culture that a man gets an insight into the whole. In part, culture is *samskriti*, or a process of refinement.

From anthropological viewpoint the term 'culture' generally refers to the way of life of some group of people. The definition of the word has been a subject of wide debate since E B Taylor proposed it in 1871. He wrote—'Culture is that complex whole which includes knowledge, belief, art, morals, law, customs, and any other capabilities and habits acquired by man as a member of society'. In 1940 'Ralph Linton defined culture as 'the sum total of knowledge, attitudes and habitual behaviour patterns shared and transmitted by the members of a particular society. 'By this definition, culture includes both mental phenomena that are ideas, including ways of thinking and feeling; and behavioural phenomena like ways of acting. Culture is socially learned, meaning that it can be transmitted to another. Anthropologists also coined a new word 'enculturation' to mean transmission of culture to new generation.

That aspect of man's material creation and manifestation of nature, which the posterity has inherited from yesteryears for its recreation and preservation with an eye to its furtherance for future, can be explained as heritage. The variety, complexity and plurality of heritage context are, therefore, a matter of interesting study. As such, the nation has a great responsibility to safeguard the heritage whether movable or immovable; tangible or intangible.

Ancient monuments, objects of art and craft, oral tradition, written literature as also the natural environment — all form part of a nation's heritage. The archaeological wealth, the art and architectural marvels of a country are considered the tangible heritage, which deserve protection from bio-deterioration and human vandalism. To combat these ill-effects on these cultural heritage — museums, art galleries have been created to act as custodians of cultural properties; while the conservation institutes have been set up by the public and private sectors all over the world to infuse new life to the decaying artifacts and monuments. The improved techniques of treatment, structural conservation and restoration methodology have come to the fore for these institutes working for both the short and long term preservation of the built-heritage world over.

It is evident that culture manifests itself not only in tangible forms but also through intangible elements. It is transmitted from generation to generation by means of language, music, oral traditions, theatrical or dance performance, attitudes, gestures, practices, customs and a whole range of other forms of mediation. Intangible heritage, for example, includes voices, values, traditions, languages, oral history, folk life, creativity, adaptability and the distinctiveness of a human group, popularly perceived through the manifestations of cuisine, clothing, shelter, traditional skills and technologies, religious ceremonies, manners, customs, performing arts, story—telling and so on. Tradition is continuation of certain customs and habits; rites and ceremonies; faiths and beliefs. For most of the civilizations still alive, traditions have much significant role to play in the life of the people concerned. The world-wide museum community, therefore, has recognized that it will have to pay significant attention to intangible non-material information as well as tangible resources by fostering inter-disciplinary approaches; without ignoring whatsoever the core business of collection, documentation, presentation, preservation, education and research.

In March 2001, a UNESCO meeting defined *Intangible Cultural Heritage* as —

'Peoples learned processes along with the knowledge, skills and creativity that inform and are developed by them, the products they create, and the resources, spaces and other aspects of social and natural context necessary to their sustainability; these processes provide living communities with a sense of continuity with previous generations and are important to cultural identity, as well as to the safeguarding of cultural diversity and the creativity of humanity.'

Three categories of intangible cultural heritage can now be determined. (i) The first category should include the expressions, embodied in physical form, of the culture or traditional ways of life, folklore, etc. These expressions retain their value as long as they remain alive in the culture or economy of the community to which they belong. (ii) The second category consists of individual or collective expressions, which do not have a physical form, that is, language,

memory, oral traditions, songs and non-written traditional music. (iii) The third one includes the symbolic and metaphorical meanings of the objects, which constitute tangible heritage. Every object has two dimensions — its physical aspect, for example its shape and size, and its meaning, which is derived from its history, from the interpretation it receives from others, from its capacity to link past and present and so forth. All the three categories make intangible heritage very different from tangible heritage. Every expression of intangible heritage inevitably changes with time, say for example language. That is to say that fundamental quality of intangible cultural heritage is its vitality.

It is not out of place to mention that in India the earliest attempt to preserve intangible heritage was advocated by Kharavela, the king of Kalinga in the second century B.C. His Hathigumpha Inscription has indicated that the king was not only conversed himself with the dance and music lore of his age but also patronized the intangible tradition promoting the art for future generations to come. The king proudly records that he organized performances of dance, song, concert and acrobatics as a result of which his capital Kalinganagari danced and played as it were, in a spirit of joy and vigour (*dapa nata gita vadita samdasanahi usava samaja karapanahi cha kidapayati nagarim*)—Hathigumpha inscription of Kharavela at Udaygiri hills, Bhubaneswar, line 5. [*Epigraphia Indica*, Vol. XX (1929–30). Delhi, 1933].

An Inventory on the intangible cultural heritage of India better known as *Janapada sampada* include twenty two folk items. These are—the Buddhist chanting of Ladakh; recitation of sacred Buddhist texts in the Trans-Himalayan Ladakh Region, Jammu and Kashmir; *Chaar Bayt*: A Muslim tradition in lyrical oral poetry, of Uttar Pradesh, Madhya Pradesh and Rajasthan, *Dashavatar*: Traditional folk theatre form, Maharashtra and Goa; The festival of *Salhesh*, Bihar; *Hingan*: Votive terracotta painted plaque of Molela, Rajasthan, *Kalbelia*: Folk songs and dances, Rajasthan, *Chhau* dance, Purulia ; *Kolam*: Ritualistic threshold drawings and designs of Tamil Nadu, Lama dances of Sikkim: Buddhist monastic dances, Sikkim, *Mudiyettu*: Ritual theatre and dance drama; Kerala, *Nacha*: Folk theatre, Chhattisgarh, *Patola*: Double Ikat silk textiles of Patan, Gujarat, *Phad*: Scroll paintings and their narration, Rajasthan, *Rathwa ni Gher*: Tribal dance of Rathwas, Gujarat, *Sankheda nu lakh kam*: Lacquered turned wood furniture of Sankheda, Gujarat; *Sattriya* music, dance and theatre of Assam; *Sankirtan* of Manipur; Shadow puppet theatre traditions of *Thatheras of Jandiala Guru*: Traditional brass and copper craft of utensil making, Punjab; *Veena* and its music; Ritual fairs and festivals of the Gaddi community; *Ramman*: Religious festival and theatre of the Garhwal Himalayas.

In India there remains an instance of what may be called the ‘mixed heritage’ combining both the aspects of tangible and intangible manifestations in a single cultural property. The so called ‘musical pillars’ found in some temples from South India can be considered as the unique examples of this kind.

The most splendid monument of Hampi is undoubtedly the Vitthala Temple complex with its 56 musical pillars. These unique pillars which give musical notes look as if that the stone

pillar is singing music. It shows that the architects of Vijayanagara period had special knowledge of stones giving sound hence they created musical pillars. They acquired great skill in the science of building acoustics. It is presumed that they also made thorough investigation about these resonant stones and discovered these facing even great difficulties. It is a wonder and such thing cannot possibly be seen any where in the world. In most of the South Indian temples a single pillar is separated into columns or smaller slender pillars. The musical pillars were carved out of one solid stone column, some columns have 7, other more, some even 53 individual musical pillars hewn out of one granite stone. Some of these stone musical pillars are also noticed in the temples of Tadpatri and Lepakshi in Andhra Pradesh; Minakshi temple at Madurai, Vishnu temple at Alwar, Tirunagari, Neliyappar temple in Tirunelveli, Thanumalaya temple at Suchindram and few other places in Tamilnadu. We know from the *silalakshana* chapter of the *Hayasirsa-pancharatnam*, a ninth century text that stones are capable of emitting sonorous sounds (*gambhiranisvana*).

Whatsoever, a scientific investigation on the musical pillars of the Vitthala Temple by the scientists of the Indira Gandhi Centre for Atomic Research, Kalpakkam reveals that the solid stone columns in these pillars produce audible sound, when struck with a finger. Systematic investigations on the acoustic characteristics of the musical pillars of *mahamandapam* of the Vitthala Temple have been carried out. The eleven most popular pillars that produce sounds of specific musical instruments were considered for the investigations. The sound was recorded systematically and different nondestructive testing techniques such as low frequency ultrasonic testing, impact echo testing and in situ metallographic were employed on the musical columns of these pillars. The peak frequencies in the amplitude spectrum of the sound produced from various columns in these pillars are correlated with the dimensional measurements and ultrasonic velocity determined using impact of echo technique. The peak frequencies obtained experimentally have been found to have excellent correlation with the calculated flexural frequencies based on the dimensional measurements and ultrasonic velocities of the columns. [Nondestructive characterization of musical pillars of Mahamandapam of Vitthala Temple at Hampi, India by Kumar A, Jay Kumar T, Rao CB, Sharma GK, Rajkumar KV, Raj B, Arundhati P.]

HERITAGE CONSERVATION

Once restricted to monuments, archeological sites, and movable heritage collections, the definition of cultural heritage now includes historic urban areas, vernacular heritage, cultural landscapes (tangible heritage which include natural and cultural sites), and even living dimensions of heritage and all aspects of the physical and spiritual relationship between human societies and their environment (intangible heritage).

Cultural heritage conservation helps a community not only protect economically valuable physical assets, but also preserve its practices, history, and environment, and a sense of continuity and identity.

The aim of heritage conservation is to ensure that the cultural significance of heritage places is retained for future generations to enjoy, but how do we achieve this? In 1979, Australia adopted a charter outlining the general principles and philosophy behind heritage conservation, The Burra Charter. This now forms the backbone of the management of historic places across Australia and indeed many other countries worldwide. Under the Charter, 'conservation means all the processes of looking after a place so as to retain its cultural significance. It includes maintenance and may, according to circumstances, include preservation, restoration, reconstruction and adaptation and will commonly be a combination of more than one of these.' Therefore, conservation doesn't necessarily mean keeping a place as it is without allowing change. Over time, buildings and places need to adapt and change to different circumstances and the needs of the user or occupier. Heritage conservation is an informed process that manages and allows for this change, but at the same time perpetuating the cultural significance of the place.

Heritage conservation encompasses the identification, protection and promotion of things that are important in our culture and history. The term heritage covers a wide range of tangible things: it can be an object in our built environment; it can be an artifact of moveable cultural property; or can be a part of our natural environment. It can also be intangible, as in folklore customs, language, dialect, songs and legends. The term conservation can be defined as protection from any agent (be it environmental or human) that threatens to destroy heritage; it also implies increasing our understanding and awareness of heritage elements of the built environment, *i.e.*, of buildings, structures and sites.

Conservation and restoration of works of art is an important activity in any country which has rich heritage. This is true in the case of India. Efforts are made since 1905, to preserve, conserve the heritage by active government support and the involvement of enlightened public by way of framing laws, setting up regulatory authorities, institutions to study, teach and

conduct research. Archaeological Survey of India is the premier organization for the archaeological researches and protection of the cultural heritage of the nation. Maintenance of ancient monuments and archaeological sites and remains of national importance is the prime concern of the Archaeological Survey of India. ASI owns 3650 monuments and archaeological sites including 28 UNESCO World Heritage Sites. Additionally, 5000 listed and protected monuments come under various states but majority of Indian cities have significant urban heritage that are neither listed nor protected.

Conservation of heritage sites include buildings, artifacts, structures, areas and precincts of historic, aesthetic, architectural, cultural or environmentally significant areas or sites of scenic beauty which involves maintenance, preservation, restoration or reconstruction based on requirements. Preservation is a process involved in the maintenance of the building precinct or artifact in its present state and to prevent and retard deterioration. Restoration is the means necessary to return the fabric to its known earlier state, by means of the removal of accretion or resembling existing components or by the sensitive introduction of compatible materials.

The role of heritage conservation in achieving sustainability has not been fully recognized nor has heritage needs been integrated into sustainability.

The Indian government in 2010 had passed a Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Bill to amend an earlier law. Under the new law, any construction - whether private or government - within 100 meters of a protected monument is punishable if it is done without the clearance of the ASI.

HERITAGE OF THE WORLD

The concept of the art heritage is inseparable from the nature of the community that holds it and thus it is characterized as 'national' or 'regional' or 'municipal'. This concept is not only applied to all manifestations of art developed within the bounds of community but to works produced by national, regional or municipal artists. A specific work of conservation is required in those countries which have a vast art heritage widely distributed throughout the national territory, for in these nations fortuitous discoveries are more probable, the necessity of restoration is more frequent, and the risk of alienation or exportation is greater.

The UNESCO World Heritage Committee is responsible to establish, keep up-to-date and publish a World Heritage List of cultural and natural properties, submitted by the States and considered to be of outstanding universal value. One of the main responsibilities of this Committee is to provide technical co-operation under the World Heritage Fund for the safeguarding of World Heritage Sites to States Parties whose resources are insufficient. Emergency assistance is also available under the Fund in the case of properties severely damaged by specific natural or man-made disasters or threatened with imminent destruction.

World Heritage Committee has listed a number of sites of the world as of outstanding cultural or natural importance to the common heritage of humanity. The programme was founded with the *Convention Concerning the Protection of World Cultural and Natural Heritage*, which was adopted by the General Conference of UNESCO on November 16, 1972. Since then, 186 states party have ratified the convention. While each World Heritage site remains part of the legal territory of the state wherein the site is located, UNESCO considers it in the interest of the international community to preserve each site.

The World Heritage List includes 962 properties forming part of the cultural and natural heritage as having outstanding universal value. These include 745 cultural, 188 natural and 29 mixed properties in 137 states as of 2012.

World Heritage Sites in India

The World Heritage sites in India include 28 cultural and natural heritage properties covering caves, rock shelters, forts, temples, mosques and mausoleums, monuments, observatory, natural parks, railways and terminus. The following is the list of properties declared as World Heritage sites in our country:

1. Agra fort (1983) 2. Ajanta Caves (1983) 3. Ellora Caves (1983) 4. Taj Mahal (1983)
5. Group of monuments, Mahabalipuram (1984) 6. Sun Temple, Konarak (1984) 7. Kaziranga National park (1985) 8. Keoladeo National park (1985) 9. Manas Wildlife sanctuary (1985)

10.Churches and Convents of Goa (1986) 11.Fatehpur Sikri (1986) 12.Group of monuments in Hampi (1986) 13. Khajuraho group of monuments (1986) 14. Elephanta Caves (1987) 15. Great living Chola Temples (1987, 2004) 16.Group of monuments at Pattadakal (1987) 17. Sundarbans National park (1987) 18. Nanda Devi & Valley of flowers National parks (1988, 2005) 19. Buddhist monuments at Sanchi (1989) 20. Humayun's Tomb, Delhi (1993) 21. Qutb Minar and its monuments (1993) 22. Mountain Railways of India (1999, 2005) 23. Mahabodhi Temple Complex at Bodhgaya 24. Rock shelters of Bhimbetka (2003) 25. Champaner- Pavagarh Archaeological park (2004) 26. Chatrapati Shivaji Terminus (formerly Victoria Terminus) (2004) 27. Red Fort, Delhi (2007). 28. Jantar Mantar, Jaipur (2010)

While analyzing the list it is noticed that the World Heritage sites in India had begun to be declared first from the year 1983 and continued till 2010 with the addition of two/ three sites almost every year. Since three such sites like the Living Chola Temples, the Mountain Railways and the Valley of flowers National parks lacked some infrastructural requisites their nomination was discontinued for some time and later renewed however. As for West Bengal the State has so far bagged two World Heritage sites—the Sundarbans National park and the Darjeeling Mountain Railways, which shares the credit with two other similar high altitude Railway lines of India. We reproduce here a map showing the World Heritage sites in India, courtesy Archaeological Survey of India.

We shall now briefly discuss the importance of these sites. The sprawling caves of Bhimbetka are located about 45 kilometers north east of Bhopal, the state capital of Madhya Pradesh. The northern fringes of the ancient Vindhya ranges are home to the extraordinary rock shelters and paintings, its awesome rocks fortifying the ancient treasure within. The caves of Bhimbetka present a breathtaking view even from as far as Obaidullaganj, a small town in the vicinity of Bhimbetka. Bhimbetka owes its name to the characters of the longest epic in the world, the *Mahabharata*. It is believed that when the five brothers, called Pandavas, were banished from their kingdom, they came here and stayed in these caves. Here existed the massive rock-seating of the gigantic frame of Bhima, the second Pandava. However, the veracity of these claims still remains to be corroborated with concrete evidence. The caves of Bhimbetka were discovered in 1957-58 by one of the great accidents of history. In due course of time, the archaeological excavations yielded remains, serially from the lower palaeolithic age to the early medieval ages. Bhimbetka is a natural art gallery and an archaeological treasure. For miles together, the footsteps of the prehistoric man can be easily discerned upon the sands of time, since the caves here house rock paintings, created by man from as early as about 15,000 years ago in vivid and panoramic detail.

The first Buddhist cave monuments at Ajanta date back to the 2nd and 1st centuries B.C. During the Gupta period in the 5th and 6th centuries A.D., many more richly decorated caves were added to the original group. The paintings and sculptures of Ajanta, considered as the

masterpieces of Buddhist religious art, have had a considerable artistic influence. These caves at Ajanta contain some of the magnificent mural paintings showing lord Buddha's achievements and the pre-birth stories better called *jatakas*. Almost 29 caves were excavated around 200 B.C. but these were abandoned in about 650 A.D. Five of these caves were temples, 24 monasteries believed to have been occupied by some 200 monks and artisans. The Ajanta caves were gradually forgotten until their 'rediscovery' by a British tiger-hunting party in 1819.

Carved between 600 and 1000 A.D. the caves at Ellora bear testimony to the three prominent religious faiths in India—the Buddhist, Hindu and Jain. These 34 monasteries and temples, extending over more than 2 kilometer, were dug side by side in the wall of a high basalt cliff, not far from Aurangabad, in the state of Maharashtra. Ellora, with its uninterrupted sequence of monuments brings the artistic culture of ancient India to life. Not only is the Ellora Cave complex a unique artistic creation and a technological exploit but, with its sanctuaries devoted to Buddhism, Hinduism and Jainism, it illustrates the spirit of tolerance that was characteristic of ancient India.

The first monuments at Sanchi were erected between 272 and 237 BC during the reign of Asoka. Construction continued until the 12th century. On a hill overlooking the plain, about 40 kilometer from Bhopal, the site of Sanchi comprises a group of Buddhist monuments, which include monolithic pillars, palaces, temples and monasteries, all in different states of conservation and mainly dating back to the 2nd and 1st centuries B.C. It is the oldest Buddhist heritage site in existence and was a major center of Buddhism in India until the 12th century A.D.

The Mahabodhi temple complex is one of the four holy sites related to the life of the Lord Buddha, and particularly to the attainment of his Enlightenment. The first temple was built by emperor Asoka in the 3rd century B.C., and the present temple dates from the 5th or 6th centuries. It is one of the earliest Buddhist temples built entirely in brick, still standing in India, from the late Gupta period.

Elephanta the 'City of Caves', on an island in the Sea of Oman close to Mumbai, contains a collection of four rock art temples linked to the cult of Lord Shiva. Here, Indian art has found one of its most perfect expressions, particularly the huge high reliefs in the main cave which contains large sculpted panels relating to Siva, including his marriage to Parvati, the killing of Andhakasura, and the six-meter-high triple-headed Trimurti—in which Siva embodies the roles of creator, preserver and destroyer. Believed to have been carved out between 450 and 750 AD, they survived vandalism and remain equal in size, beauty and power to the caves at Ajanta and Ellora.

The Mammalapuram group of temples, founded by the Pallava kings, was carved out of rock along the Coromandel Coast in the 7th and 8th centuries. It is known especially for its

rathas or temples in the form of chariots, *mandapas* or cave sanctuaries, giant open-air reliefs such as the famous *Descent of the Ganga*, and the temple of Rivage, with thousands of sculptures to the glory of Shiva.

The temples at Khajuraho were built during the Chandella dynasty, which reached its apex between 950 and 1050. Only about 25 temples remain; they fall into three distinct groups and belong to two different religions—Hinduism and Jainism. They strike a perfect balance between architecture and sculpture. The Kandariya temple is decorated with a profusion of sculptures that are among the greatest masterpieces of Indian art.

On the shores of the Bay of Bengal, bathed in the rays of the rising sun, the temple at Konark is a monumental representation of the Sun god Surya's chariot; its 24 wheels are decorated with symbolic designs and it is led by a team of six horses. Built in the 13th century, Konark is one of India's most famous Hindu sanctuaries.

The austere, grandiose site of Hampi was the last capital of the last great Hindu kingdom of Vijayanagar dating from 1336 to 1646 AD. Its fabulously rich princes built Dravidian temples and palaces, which won the admiration of travellers between the 14th and 16th centuries. Conquered by the Deccan Muslim confederacy in 1565 the city was pillaged over a period of six months before being abandoned.

Pattadakal, in Karnataka, illustrates the apogee of an eclectic art, which, in the 7th and 8th centuries A.D., under the Chalukya dynasty, achieved a harmonious blend of architectural forms from the north and south of India. An impressive series of nine Hindu temples, as well as a Jain site can be seen there. In this group one masterpiece stands out—the temple of Virupaksha, built around 740 A.D. by Queen Lokamahadevi to commemorate her husband's victory over the kings from the south.

Brihadisvara temple of Tanjore (Thanjavur) was built between 1003 and 1010 in the reign of the great King Rajaraja (985-1012 AD), founder of the Chola empire that stretched over all of South India and the neighbouring islands. Surrounded by two rectangular enclosures, the Brihadisvara temple was built from blocks of granite and, in part, from bricks, is crowned with a pyramidal 13-storey tower, the *vimana*, standing 61m high and topped with a bulb-shaped monolith. The walls of the temple are covered with rich sculptural decorations. Architecturally, it is the most ambitious structural temple built of granite. It has been regarded as a 'landmark in the evolution of building art in south India' and its *vimana* as a 'touchstone of Indian architecture as a whole'.

Built in the early 13th century a few kilometers south of Delhi, the red sandstone tower of Qutb Minar is 72.5m high, tapering from 2.75m in diameter at its peak to 14.32m at its base, and alternating angular and rounded flutings. The surrounding archaeological area contains funerary buildings, notably the magnificent Alai-Darwaza gate, the masterpiece of Indo-Muslim art that was built in 1311, and two mosques, including the Quwwatu'l-Islam, the oldest in northern India, built of materials reused from some 20 Hindu temples.

Humayun's tomb, built in 1570, is of particular cultural significance as it was the first garden-tomb on the Indian subcontinent. It inspired several major architectural innovations, culminating in the construction of the Taj Mahal.

The foundation of Agra fort was laid by the Mughal emperor Akbar in 1565. Mostly built in red sandstone the fort area includes the Pearl mosque and many other noteworthy architectural marvels. This powerful fortress of red sandstone encompasses, within its 2.5-kilometer long enclosure walls, the imperial city of the Mughal rulers. It comprises many fairytale palaces, such as the Jahangir Palace and the Khas Mahal, built by Shah Jahan; audience halls, such as the Diwan-i-Khas; and two very beautiful mosques.

Built during the second half of the 16th century by the emperor Akbar, Fatehpur Sikri or 'the City of Victory' was the capital of the Mughal Empire for only some ten years. The complex of monuments and temples, all in a uniform architectural style, includes one of the largest mosques in India, the Jama Masjid

An immense mausoleum of white marble, built in Agra between 1631 and 1648 by order of the Mughal emperor Shah Jahan in memory of his favourite wife, Mumtaz Mahal, the Taj Mahal is the jewel of Islamic art in India and one of the universally admired masterpieces of the world's heritage.

The Jantar Mantar in Jaipur is an astronomical observation site built in the early 18th century. It includes a set of some 20 main fixed instruments. They are monumental examples in masonry of known instruments but which in many cases have specific characteristics of their own. Designed for the observation of astronomical positions with the naked eye, they embody several architectural and instrumental innovations. This is the most significant, most comprehensive, and the best preserved of India's historic observatories. It is an expression of the astronomical skills and cosmological concepts of the court of a scholarly prince at the end of the Mughal period.

The churches and convents of Goa, the former capital of the Portuguese Indies – particularly the Church of Bom Jesus, which contains the tomb of St Francis-Xavier illustrate the evangelization of Asia. These monuments were influential in spreading forms of Manueline, Mannerist and Baroque art in all the countries of Asia where missions were established.

The Sundarbans which covers 10,000-square-km of land and water, from which more than half of park area is in India and the rest in Bangladesh, is a region of the Ganges delta. It contains the world's largest area of mangrove forests. A number of rare or endangered species live in the park, including Bengal tigers, aquatic mammals, birds and reptiles.

In the heart of Assam, Kaziranga Park is one of the last wild abodes in eastern India undisturbed by human presence. The world's largest population of one-horned rhinoceroses, as well as many mammals, including tigers, elephants, panthers and bears, and thousands of birds inhabit it.

On a gentle slope in the foothills of the Himalayas, where wooded hills give way to alluvial grasslands and tropical forests, the Manas Sanctuary is home to a great variety of wildlife, including many endangered species, such as the tiger, pygmy hog, Indian rhinoceros and elephant.

The former duck-hunting reserve of the Maharajas, the Keoladeo National Park is one of the major wintering areas for large numbers of aquatic birds from Afghanistan, Turkmenistan, China and Siberia. Some 364 species of birds, including the rare Siberian crane have been recorded in the park.

The Nanda Devi National Park is one of the most spectacular wilderness areas in the Himalayas. It is dominated by the peak of Nanda Devi, which rises to over 7,800 meter. No humans live in the park, which has remained more or less intact because of its inaccessibility. It is the habitat of several endangered mammals, especially the snow leopard, Himalayan musk deer and bharal.

Champaner located at a distance of 50 km from Baroda at the foothill of the Pavagadh hill in Gujarat, is composed of reddish-yellow coloured stone. The hill rises to a height of nearly 800 meter from the mean sea level. Pavagadh hill was a famous Hindu fortress under the Solanki kings of Gujarat followed by Khichi Chauhans. In 1484, Sultan Mahmud Begarah took possession of the fort. The earliest temple datable to 10th -11th century is dedicated to Lakulisa of which only *gudhamandapa* and *antarala* is extant. Other temples belong to Hindu and Jaina sects and are datable to circa 13th - 15th centuries A.D. The fortification is consisted of massive sandstones with intermediate bastions and beautiful balconies. Out of the massive ruins, five mosques are still in good condition. The structures represent a perfect blend of Hindu-Islamic architecture. The Champaner-Pavagadh Archaeological Park with its ancient Hindu and Jaina architecture, temples and special water retaining installations together with its religious, military and agricultural structures, dating back to the 16th century, represents the variety of cultures which have of late disappeared.

The Valley of Flowers National Park is an Indian national park in the Himalayan area. The area lies on the Zaskar range of the Himalayas with the highest point in the national park being Gauri Parbat at 6,719 meter above sea level. The Park is home to tahr, snow leopard, musk deer, red fox, common langur, bharal, serow, Himalayan black bear and a huge variety of butterflies. Flowers mostly orchids, poppies, primulas; calendulas, daisies and anemones carpet the ground. Alpine forests of birch and rhododendron cover parts of the Park's area.

The Darjeeling Himalayan Railway is the first, and still the most outstanding, example of a hill passenger railway. Opened in 1881, it applied bold, ingenious engineering solutions to the problem of establishing an effective rail link across a mountainous terrain of great beauty. It is still fully operational and retains most of its original features.

The Chatrapati Shivaji Terminus Station was designed by Frederick William Stevens, in 1887-1888, who earned the commission to construct the Station after a masterpiece watercolor sketch by draughtsman Axel Herman. The final design bears some resemblance to St Pancras Station in London. It took ten years to complete and was named Victoria Terminus in honour of the reigning Queen Victoria. In 1996, the Station was renamed after Chhatrapati Shivaji, a famed 17th century Maratha king. On July 2, 2004 the Station was nominated as World Heritage site by the World Heritage Committee of the UNESCO.

Heritage sites of national importance in West Bengal

We now turn our attention to the heritage scene in West Bengal. Until 1997 about 13 archaeological sites and monuments have been notified as important national heritage sites in this state. Some of these are situated in a cultural complex, such as Gaur-Pandua, Vishnupur and Katoya. Again location of many of these sites is found in different places separated by miles away.

The district of Bankura possesses thirty-five temples and monuments. These are the Rock inscription of Chandravarman on the Susunia hill belonging to the Gupta period; the shrines at Sarenga and Paresnath; Gokulchand temple at Gokulnagar; Shyamsundar temple at Madanpur; temple of Radhadamodarjiu at Ghutgeria and the cluster of 21 temples at Vishnupur namely Rasmancha (1600), Malleswar (1622), Shyam Rai (1643), Jor Bangla (1655), Kalachand (1656), Laljiu (1658), Radha Shyam (1659), Radhavinod (1659), Madangopal (1665), Muralimohan (1665), Madanmohan (1694), Jor Mandir (1726), Radha Govinda (1729), and Radha Madhav (1737) .

In Burdwn district the sites and temples declared as heritage of national importance include the 11th century Jain brick temple at Deuliya, Begunia group of Siva temples ascribable to the 15th century, brick temples at Vaidyapur constructed in 16th century, stone temple at Garui, mid-18th century temple dedicated by Ichai Ghosh at Gaurangapur, Rudreswar temple at Bamunara and some 18th-19th century temples at Kalna. Of Islamic architecture of the 18th-19th centuries the tombs of Sher Afghan and Nawab Qutbuddin are noteworthy.

The 10th-11th century mound at Bhadeswar, the temple of Radhavinod at Joydev-Kenduli built in 1683; another mound at Nanur, the temples of Bashuli, and the cluster of fourteen temples dedicated to Siva in Birbhum district have been brought under the category of national heritage.

In Hooghly district ten important archaeological edifices were designated as heritage spots. These are the 6th century remains discovered at Mahanad, the 13th century *dargah* of Zafar Khan Gazi at Triveni, the mosque and minarets at Pandua of the same period, the Vasudev temple (1679) and the Hamseswari temple (1814) at Bansberia, the cemeteries of the Dutch and Danish communities at Chinsurah and Serampore as also the mosques and mausoleums at Saptagram.

The 7th century ruins of the Buddhist Raktamrittika vihar discovered at Chiruti, the archaeological site at Panchthupi, the Katra mosque (1723), the tomb of Begum Azimunnisa (1720), Nawab Suzauddin's cemetery at Roshnibag, the royal tombs at Khoshbag of Nawab Alivardi Khan and his grandson Sirajuddaula—the last Nawab of Bengal, Dutch cemetery at Kalikapur, Mir Madan's tomb at Faridpur, the *charbangla* terracotta temple and the Bhavaniswar temple at Baranagar, the European cemetery at Baharampur and last but not the least the Hazarduari palace are the heritage destination in Murshidabad district.

In Maldah district there are altogether twenty-one important sites of the Sultani period (15th-16th century), which come under the list of heritage of West Bengal. At Gaud the Baishgaji fort, Chamkatti mosque, Barduari mosque, Chika minar, Dakhil darwaza, Kotwali darwaza, Kadamsarul and Tanti mosques, Lotan masjid, Nimsarai buruz are the famous seats of Islamic architecture. Old Pandua can boast of large Adina mosque, Qutbshahi mosque and Eklakhi tombs noted for Indo-Islamic architectural style.

South Dinajpur district is famous for the great mound discovered at Bangarh as also the Shah Ata's *dargah*, the archaeological mound known as Rajpat at Gosanimari and the royal palace of the Cochbehar kings.

The district of Nadia unfolded at Bamanpukur the historic mound of Ballalrajar dhibi and the 17th century temple at Palpara.

From Midnapore district the Kurumbera fort of 14th-15th century and the Cemetery of John Pearse have been listed as heritage spots. The hill district of Darjeeling preserves the monuments of the Hungarian Tibetologist Alexander Csoma de Coros and General Lloyd. The both two 24 Parganas enlisted as heritage sites a historic ruin at Chandraketugarh revealing the earlier phases of Indian socio-cultural history, as also a one of the earliest brick temples in the region known as Jatar deul.

In recent years the metropolitan cities of the country have started listing their own heritage buildings.

An alphabetical list of monuments of West Bengal published by the Calcutta Circle of the Archaeological Survey of India records 133 such sites. (*Appendix -I*)

Like West Bengal many other states in India have embarked upon the project to identify their respective heritage buildings and monuments of historical importance.

The Kolkata Municipal Corporation has started earmarking from 26th May 1996 a good number of heritage buildings, monuments of historical nature and of socio-cultural significance. The first list of 84 properties of exceptional importance compiled by the Corporation has been declared couple of years ago. These include palaces, fort, castles, gardens, parks, cemeteries, cremation grounds, temples, cathedrals, churches, mosques, museums, mausoleums, residential places of the celebrities, colleges, schools, mint, libraries, observatory, public halls, clubs, newspaper houses, hotels, bathing ghats and even a godown.

Through various process and documentation stages in assistance with the Expert Committee formed by the Government of West Bengal, a list of such heritage buildings has been prepared and being up-dated regularly. The Corporation with the recommendation of the Heritage Conservation Committee has prepared a graded list of Heritage Buildings for Grade-I, Grade-IIA & Grade-IIB. At present 611 buildings fall under Grade I; 197 under Grade II A and 109 in Grade IIB categories. Following is the table from the Calcutta Municipal Corporation Website:

Grade	Sub-Grade	Permissible intervention of the heritage premises
I		No external change will be permissible. Use of the building should also be compatible with the category of the heritage building
II	A	Same as Grade-I for the heritage building. But new construction may be allowed in the open land within the premises in compatible manner with the heritage building. In no case new construction should obstruct the view of the heritage building.
III	B	Horizontal and vertical addition and alteration of the building may be allowed in compatible with the heritage building A plaque depicting the history of the building should be provided. Where the structure is having no architectural importance, demolition of the structure may be allowed.
Grade	Sub-Grade	Permissible intervention of the heritage premises

DOCUMENTARY HERITAGE UPKEEP

UNESCO describes heritage as whatever has lasting value and significance and recommends that it should be protected and preserved for current and future generations. The documents in the archives and libraries of the world are indispensable sources for many scholarly disciplines. They are also sources for more informal purposes: self-education, entertainment and general interest. No evaluation of politics, history, everyday life, music and performing arts would be possible without these documents.

The safeguarding of all these documents has until recently been primarily associated with the keeping of books and other written materials. This is partly, perhaps, because textual libraries have existed for more than 4000 years, while audiovisual archives have been in existence for only less than 100 years. The newest forms of document have been in common existence for less than a decade. There are, however, fundamental differences between the different types of documents. Printed matter represents human thoughts by the use of a stock of symbols. In contrast, the audiovisual document is an analogue representation of a physical status or event: every part of such a document is information. Seen from the perspective of redundancy, audiovisual documents call for a higher degree of protection and security than written materials. Digital data can also be similarly endangered. Digital heritage is the computerized form of valuable information, and may include texts, databases, still and moving images.

Memory of the World

The Memory of the World programme is UNESCO's premier action for preserving documentary heritage. This includes books, manuscripts, newspapers, photographs and historic records, as well as films, audio and video tapes and discs. The programme aims to raise awareness of issues related to preservation of documentary heritage. The various types of documents are divided into five groups. (1) *The Paper and Other Traditional Materials group* includes paper, parchment, leather and palm leaves. Seals are also included in this group. This is the oldest and largest group of documents. (2) *The Photographic Materials group* includes all types of still photographic images — black and white and colour; negative and positive; transparency and print — on all types of carriers - paper, glass, cellulose and other materials and includes micrographs of all types. (3) *The Mechanical Carriers group* covers sound recordings on cylinders and discs. (4) *The Magnetic Materials group* include all forms of magnetic material - tapes, hard discs and floppy discs. (5) *The Optical Materials group* includes all laser read and written materials including CD-Audio, CD-ROM, CD-recordable, magneto-optical disks and optical tape. International Advisory Committee for the UNESCO

Memory of the World Programme has prepared a guide line for safeguarding the documentary heritage

The Documentary Heritage Management Framework is designed to encapsulate the new strategic directions at Library and Archives. These directions respond to the changing information environment and focus on acquisition, preservation, and resource discovery.

The conservation and transmission of collective memory is a preoccupation for other heritage players, beyond the museum community. For this reason, for the first time ever, the International Council of Museums has initiated close institutional partnerships with other organizations that feel concerned by these questions and share ICOM's preoccupation for the preservation of memory: the UNESCO Memory of the World programme, the Coordinating council of Audiovisual Archives Associations (CCAAA), the International Council on Archives (ICA), the International Council on Monuments and Sites (ICOMOS) and the International Federation of Library Associations and Institutions (IFLA). It has been decided to open Memory of the World registers that list documentary heritage of world significance at international, regional and national levels. The goal of the registers is to raise awareness of the importance of documentary heritage in preserving the world's memory and guard against its destruction by acts of violence or nature, or through neglect or improper care. Increasing access to worldwide documentary heritage is also a key goal of Memory of the World. Museums are not as well represented in Memory of the World registers as libraries and archives – of the 193 inscriptions currently in the International Memory of the World Register, only 23 are from museums or housed in museum institutions. Yet museums play a significant part in collecting and preserving memories and making them accessible. Museums collect documents as well as three-dimensional objects, including oral histories and eventually can provide access to these documents through exhibitions, and increasingly through websites.

Museum & Memory

Museums preserve memories and tell stories. They have in their collections numerous objects that are fundamental to the memory of the communities we live in. These objects are the expression of our natural and cultural heritage. Many of them are fragile, some endangered, and they all need special care and conservation. Museums use artwork, displays, artifacts and architecture to recreate events and so produce a cue for our minds to compile a memory. An archive is the depositing, recording and codification of materials, whether animate or inanimate. The museum is an archive since it gathers, classifies and organizes all information that composes a story of a cultural context, in an Art Museum, of a political context, in a Museum of National History. The Museum being an archive follows the way memory operates.

MANAGING CULTURAL HERITAGE

Once restricted to monuments, archeological sites, and movable heritage collections, the definition of cultural heritage now includes historic urban areas, vernacular heritage, cultural landscapes (tangible heritage which include natural and cultural sites), and even living dimensions of heritage and all aspects of the physical and spiritual relationship between human societies and their environment (intangible heritage).

Cultural heritage management is the vocation and practice of managing cultural heritage. It is a branch of cultural resource management although it also draws on the practices of conservation, restoration, museology, archaeology, history and architecture. Cultural heritage management has traditionally been concerned with the identification, interpretation, maintenance, and preservation of significant cultural sites and physical heritage assets, although intangible aspects of heritage such as traditional skills, cultures and languages are also considered. The subject typically receives most attention, and resources, in the face of threat, where the focus is often upon rescue or salvage archaeology. Possible threats include urban development, large-scale agriculture, mining activity, looting, erosion or unsustainable visitor numbers.

Cultural heritage management has its roots in the rescue archaeology and urban archaeology. Salvage projects were hasty attempts to identify and rescue archaeological remains before they were destroyed to make room for large public-works projects or other construction. Although many sites were lost, much data was saved for posterity through these salvage efforts.

In more recent decades, legislation has been passed that emphasizes the identification and protection of cultural sites, especially those on public lands. Modern thinking takes the view that cultural heritage belongs to the people; therefore access to cultural heritage has to be ensured.

The legislation of individual nations is often based upon ratification of UNESCO conventions, such as the 1972 World Heritage Convention, the Valletta treaty and the 2001 Convention on the Protection of the Underwater Cultural Heritage. Specific legislation is sometimes needed to ensure the appropriate protection of individual sites recognized as World Heritage Sites.

The cultural heritage is rich and varied; it consists of tangible and intangible resources and incorporates archaeological sites, historic buildings, cultural and natural landscapes, ethnographic and historic collections, as well as a thriving traditional folklore.

We have already stated that the intangible cultural heritage consists of traditional skills, beliefs, oral traditions, music, songs, dance, drama etc. These cannot be stored in a museum but are constantly reinterpreted by the people in a particular cultural region. The management of intangible cultural heritage is difficult as it requires consideration of the lives and living

conditions of local communities. Some countries such as India and the members of the African union have recognized the importance of cultural resources and established government departments to manage them. Throughout the world, increasing populations and development are leading to the destruction of many archaeological sites. Archaeologists have taken the lead to protect these sites, by supporting the creation of protection laws and conducting archaeological research in advance of site destruction.

Heritage and urban development

Conservation of urban heritage can be linked with high revenues. 'It not only helps in tourism but ancient (restored and well – kept) buildings also offer an image to the city. Transformation of city image through its nerve centers like decaying docks, decaying neighbourhoods, etc, can be achieved, which travellers would like to see'. Community and various stake holders near heritage monuments receive lack of protection and are losing their identity, where their active involvement is desired.

LAWS PROTECTING CULTURAL HERITAGE

Protection of cultural properties in India has been looked upon by the national legislation since 1810 with the promulgation of *Bengal Regulations XIX of 1810*, section (iii) and (iv). The Madras Regulations of 1817 repeated the same. The next legislative measure was the Act XX of 1863, which invested the government with the authority 'to prevent injury to and to preserve buildings remarkable for their antiquity or for the historical or architectural value.'

The next law that was enacted and still in force is the *Indian Treasure Trove Act 1878*, which shifted the attention from monuments to the antiquities. This Act aimed at combating treasure hunting and regulating, of course, the lawful disposal of treasures found in chance digging. In 1904, the *Ancient Monuments Preservation Act* was passed which assured preservation of ancient monuments and the exercise of control over trafficking in antiquities and over excavation in certain places. The Act also took in its fold the protection and acquisition of ancient monuments and of objects of archaeological, historical or artistic interest. This Act was given a broad based structure by the passing of *Ancient Monuments and Archaeological Sites and Remains Act 1958*. The old Act of 1904 was not repealed. It was also felt necessary in a changed situation to issue another rule entitled *Ancient Monuments and Archaeological Sites and Remains Rules 1959*. Both the Act of 1958 and the Rules 1959 came into force from October 15, 1959.

The post Independence scenario of antiquarian laws reveals that at least six such Acts and Regulations came into vogue with the passage of time. The Indian Legislature passed the *Antiquities (Export Control) Act, 1947*, according to which no antiquity can be exported without the license issued by the Director General of Archaeological Survey of India. Through the spirit of this Act, such cultural property should be considered as antiquity, which is of a minimum age of seventy-five in the case of manuscripts and documents and one hundred years for other objects as detailed in the list. Antiquity here includes 'any coin, sculpture, manuscript, epigraph, or other work of art or craftsmanship; any article, object or thing detached from a building or cave; any article, object or thing illustrative of science, art, culture, literature, religion, customs, morals or politics in bygone ages; any article or thing declared by the Central Government by notification in the Official Gazette to be an antiquity for the purpose of the Act, which has been in existence for or less than one hundred years.'

The Act prohibits persons to export from Indian Territory by way of sea, land or air any antiquity as stated above except under the authority of a license granted by the Central Government. As the provisions of the Antiquities (Export Control) Act, 1947 was found to be inadequate to cope up with the alarmingly high incidence of theft and illicit traffic in antiquities, a new legislation called the *Antiquities and Art Treasures Act, 1972* was passed on September 9, 1972.

The Act and the *Antiquities and Art Treasures Rules, 1973*, began to deal with a new category, i.e. 'art treasures', which were not antiquities within the meaning of the same

legislation. The art treasure is defined as 'any human work of art, not being an antiquity, declared by the Central Government by notification in the Official Gazette having regard to its artistic or aesthetic value.

The Central Government has declared paintings including drawings, sketches, diagrams and the like and the objects of plastic art by Ravi Varma, Rabindranath Tagore, Abanindranath Tagore, Gaganendranath Tagore, Nandalal Bose, Jamini Roy, Amrita Sher Gil, Sailoz Mukherjee and Nicholas Roerich as art treasures for the purpose of the Act. Though the *Antiquities and Art Treasures Act along with the Rules* was enforced from April 5, 1976, an ordinance amending certain provisions of the Act was promulgated in June 1976, which came to be known as *Antiquities and Art Treasures (Amendment) Ordinance 1976* and later made into an Act.

The protection of cultural properties has also been discussed in details in the international forum at Hague as early as 1954 during the *Convention and Protocol for the Protection of Cultural Property* in the event of armed conflict and the instruments of ratification was deposited on June, 16, 1958. The Convention and Protocol was enforced in respect of India on September, 16, 1958. Another Convention on the means prohibiting and preventing the illicit import, export and transfer of ownership of cultural property was held in Paris in the year 1970 which was ratified on January 24, 1977. This was entered in force in India on April 24, 1977.

The 1954 Hague Convention and its Protocol represent the first multilateral treaty addressing specifically such protection is currently in force among 114 nations. The 1970 *UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import and Export and Transfer of Ownership of Cultural Property* also apply in cases of military occupation. Indeed the human history has shown that during conflicts and subsequent occupation; poverty and difficult conditions are likely to increase looting and theft including the plundering of cultural property. The 1970 Convention currently in force among 107 nations was a pioneer instrument at the time of its negotiation and adoption. Twenty five years later, the 1970 Convention was complemented, primarily on the private law aspects of restitution, by the *UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects* adopted in 1995 which encompasses also illicitly exported objects, which are to be returned even if they were not stolen before illicitly exported.

The protection of cultural heritage has witnessed ethical and legal, national and international initiatives. The former are usually in the form of Code of Ethics, while the latter take the form or legislation (laws and decrees) at the national level. An important difference exists between the law and the ethics. While ethics may influence the elaboration of a legal rule, or even possess a principle identical to the content of specific legal rule; ethics as such is not 'legally' binding. Unless a legal instrument expressly stipulates consequences, non-compliance of an ethical rule or principle *per se* does not generally raise properly legal sanctions (*i.e.* imprisonment, forfeiture, fines, damages to be paid etc.).

HERITAGE IN THE SKY AND UNDER WATER

Moonbeams and Cultural Heritage

The Historical Resources Commission for the State of California recently listed 106 items left on the Moon from the landing of Apollo II on the Historical Resources List. Archaeologist Lisa Westwood had worked alone on the project before encountering three others with a similar goal: Beth O'Leary, Department of Anthropology, New Mexico State University; Ralph Gibson, Placer County Museums; and John Versluis, Texas Heritage Museum. Four years ago, in Westwood's class *Society, Time, Archaeology*, she talked about resources management and what qualifies for protection. She used the artifacts left on the Moon and Tranquility Base as an example of a site that was not old, but was worthy of some protection. 'It is a case study of a site that doesn't fit well with existing law and protocol. I contacted NASA; they've been very nice and supportive. The wall I hit with NASA is that any one country as part of an international treaty can't claim the lunar surface. The way it stands right now, there is no protection for these objects or the site. Interesting to note that NASA has "lost" some of the original documentation— and I do recognize that there is an interesting heritage management exercise here '.

In 2002 R.G. Steiner of the University of Alaska proposed in a paper that the Moon, in its entirety, be designated a United Nations World Heritage Site permanently protected from any and all commercial or military utilization and be reserved exclusively for scientific and aesthetic purposes. He further added that the extraordinary, irreplaceable cultural and natural value of the Moon, be reserved exclusively for scientific purposes and aesthetic/religious appreciation under the collective responsibility of all humankind.

Underwater Cultural Heritage

To encourage the protection and management of underwater cultural heritage in inland and inshore waters, in shallow seas and in the deep oceans a *Charter on the Protection and Management of Underwater Cultural Heritage* was promulgated in 1996.

It focuses on the specific attributes and circumstances of cultural heritage under water and should be understood as a supplement to the ICOMOS *Charter for the Protection and Management of Archaeological Heritage, 1990*. The 1990 Charter defines the 'archaeological heritage' as that part of the material heritage in respect of which archaeological methods provide primary information, comprising all vestiges of human existence and consisting of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds, together with all the portable cultural material associated with them. For the purposes

of this Charter underwater cultural heritage is understood to mean the archaeological heritage which is in, or has been removed from, an underwater environment. It includes submerged sites and structures, wreck-sites and wreckage and their archaeological and natural context.

By its very character the underwater cultural heritage is an international resource. A large part of the underwater cultural heritage is located in an international setting and derives from international trade and communication in which ships and their contents are lost at a distance from their origin or destination.

Archaeology is a public activity; everybody is entitled to draw upon the past in informing their own lives, and every effort to curtail knowledge of the past is an infringement of personal autonomy. Underwater cultural heritage contributes to the formation of identity and can be important to people's sense of community. If managed sensitively, underwater cultural heritage can play a positive role in the promotion of recreation and tourism.

Underwater cultural heritage may be threatened by construction work that alters the shore and sea-bed or alters the flow of current, sediment and pollutants. Underwater cultural heritage may also be threatened by insensitive exploitation of living and non-living resources. Many of these threats can be removed or substantially reduced by early consultation with archaeologists and by implementing mitigatory projects. This Charter is intended to assist in bringing a high standard of archaeological expertise to bear on such threats to underwater cultural heritage in a prompt and efficient manner.

Underwater cultural heritage is also threatened by activities that are wholly undesirable because they are intended to profit few at the expense of many. Commercial exploitation of underwater cultural heritage for trade or speculation is fundamentally incompatible with the protection and management of the heritage. This Charter is intended to ensure that all investigations are explicit in their aims, methodology and anticipated results so that the intention of each project is transparent to all.

In 2005, the World Heritage marine programme was established to protect marine areas with outstanding universal values.

Marine archaeology also known as maritime, nautical or underwater archaeology deals with the 'scientific study of the material remains of man and his past activities on the sea'. Marine archaeology has made tremendous progress in India. Over the years, the National Institute of Oceanography, Goa, in collaboration with other Government agencies has undertaken the exploration and excavation of submerged ports and shipwrecks at Dwarka, Bet Dwarka, Somnath, Vijaydurg, Goa and Lakshadweep on the west coast; and Poompuhar and Mahabalipuram on the east coast of India. Further, onshore explorations have also been carried out at various places along both coasts of India to locate ports, trading centers and structures related to maritime activities. These findings from various sites in India, confirm her rich submerged cultural heritage, conservation of which is a prime necessity. A modest beginning has been made in this direction and more thrust is required before this submerged

heritage is destroyed owing to intense activity along the coast, resulting from globalization and rapid industrialization

Marine archaeology is primarily concerned with the documentation, investigation and recovery of material remains and physical traces of maritime communities, technologies and practices. The material remains of the activities of men can be traced in and alongside seas, lakes and rivers. Sunken ships, cargo, tools and anchors lost in voyages are important sources of information.

The main objective of *nautical archaeology* is to study different types of seagoing vessels, their construction techniques and various kinds of usages; whereas *maritime archaeology* encompasses all kinds of maritime activities, which includes trade, commerce, exchange, water transport technology, seafaring, coastal settlement, ports and harbours. Much of the work of maritime archaeologists is not related to excavation but involves surveying maritime sites, assessing their archaeological potential, making management recommendations and interpreting these sites to the wider community.

All underwater antiquities, port installations and ships must be explored, preserved and analysed in order to reconstruct the maritime history of mankind. The underwater heritage of India, in the form of submerged cities and sunken ships spans a period of around 4000 years or more. The best efforts of S.R. Rao helped initiate this interdisciplinary subject in National Institute of Oceanography in 1981. Since then, various government and private organizations have extended financial support for this research. In a span of two decades, marine archaeological explorations and excavations have been carried out in Dwarka, Bet Dwarka, Somnath, Vijaydurg, Malwan, Goa, Lakshadweep Islands, Poompuhar and Mahabalipuram waters. Onshore and near-shore explorations have been carried out at various ancient port sites such as Chilika and adjoining regions, Kalingapatnam, Machilipatnam, along the Rameswaram coast, Calicut, Beypore, Mangalore, Honavar, Bhatkal, Ratnagiri, Dhobal, Chaul, Janjira amongst other sites prior to undertaking offshore explorations.

Although a late development, marine archaeology is a fast developing discipline in India. The University Grants Commission established the Centre for Underwater Archaeology in Mandala Camp, Tamil University, and Thanjavur in 1983. However, the Centre concentrated to a greater extent on traditional navigation and shipbuilding technology of peninsular India. The centre also retrieved iron and stone anchors from along the Tamil Nadu coast (Rajamanickam 1992). The Marine Archaeological Centre of Andhra University, Visakhapatnam carried out work off the coast of Visakhapatnam, Andhra Pradesh, in order to investigate a 11th century Shiva temple which was presumed to be submerged here. Preliminary explorations were carried out in 1989 (Gangadharan 1991). Recently, the Archaeological Survey of India established a marine archaeology wing, and the exploration of shipwrecks was carried out in Lakshadweep and Mahabalipuram waters (Tripathi 2001-02). Similarly, the National Institute of Ocean and Technology, Chennai carried out geophysical surveys off

the Gulf of Khambat and discovered remains of an early civilization. It has carried out both onshore and offshore explorations along the East and West Coast of India in order to locate submerged ports, coastal cities and shipwrecks.

Objectives of Marine Archaeology

The foremost objectives of marine archaeology are: (i) to discover, excavate, interpret and preserve for posterity the underwater cultural heritage of our country, (ii) to reconstruct the history of maritime trade and maritime structures such as docks, wharves, warehouses, ship repairing yards etc., (iii) to trace the development of boat building and navigational technology by excavating submerged ports and sunken ships, (iv) to preserve antiquities for scientific and educational purposes, (v) to study shoreline changes, coastal erosion, sedimentation, and the like through a study of habitational remains in areas adjoining the sea, and (vi) to study the effect of marine environments on metal and wooden objects and on other perishable materials. Information on sea voyages, maritime contacts, navigation, shipbuilding, trade and commerce, and shipwrecks are found in ancient Indian literature and in travellers' accounts.

However, the location of and detailed information on shipwrecks, are rarely mentioned. Indian art, archaeological finds, sculptures, coins, seals, sealings and the paintings of Ajanta indicate type of boats used in rivers, lakes and ships for purposes of overseas trade and commerce, ferrying people, etc. But here we record an account of shipwreck during the Maurya dynasty in India. That king Asoka issued a copperplate grant, a sort of edict which according to Dr Radhakumud Mukherji may be called 'Asoka's Marine Edict' at the requests of some Indian merchants who were ruined by the depredations of sea-faring pirates called Nagas (probably the Chinese, who are the worshippers of the Dragon) is evidenced from some of the passages of the *Bodhisattvavadanakalpalata* of the Kashmirian poet Kshemendra. In the 73rd *pallava* of the book it is mentioned that persuaded by a devout Buddhist Indra by name the king caused to be inscribed this copper plate:—

Naganam ratnachauranaam tvatpratagnisuchakah /

Tamrapattarpito lekhah presyatam prithivipate //

Iti bhikshuvacah shrutva lekham raja visristavan //

The king caused to be prepared a copper-plate grant being appraised by a Buddhist mendicant about the looting of treasures of the merchants by the sea-faring pirates called Nagas.

[*History of Indian Shipping*, by R.K. Mukherji pp.79-80 also *Shipping and maritime activities in ancient India*]

Important sites of underwater heritage in India

Dwaraka

In 1963 the Deccan College, Pune, excavated Dwarka (inland excavations); and brought to light early historical (1st century A.D.) and medieval potteries. Further excavations in the

forecourt of the present Dwarkadhish temple in 1979-80 by the Archaeological Survey of India yielded the remains of a Vishnu temple of the 9th century A.D., two more phases of the temple datable to the 1st century B.C. /A.D.; and evidence of the destruction of a settlement belonging to the Protohistoric and Early Historic Period (Rao 1988).

Subsequent offshore explorations off Dwarka by the Marine Archaeology Centre of National Institute of Oceanography brought to light the remains of port installations, and a large number of stone anchors of various shapes and sizes (Rao 1990). The Geophysical survey traced the ancient channel of the River Gomati over a length of 1.2 km seaward at 8 to 10 m water-depth (Vora *et al.* 1991). Further underwater explorations carried out from 1997 to 2001 covered a larger area, and up to 25 m water-depth off Dwarka, and aimed at locating the remains of settlements of the Protohistoric period. However, the findings include a number of semicircular and rectangular stone blocks scattered over a large area, a few semicircular structures having 2-3 courses, various types and sizes of stone anchors belonging to the historical and medieval period, and a rectangular stone block engraved with Gujarati script, probably of a later period. Thus these remains confirm that they belong to a jetty, which might have collapsed over the years. Moreover, both near shore and offshore investigations have not revealed any pottery and artifacts belonging to the Protohistoric period off Dwarka. The structures, which were located off Dwarka, have also been noticed in the intertidal zone. Further, similar kinds of circular, semicircular stone have also been noticed during low tide at Rupen Bandar, three structures and stone blocks belonging to a century old jetty north of Dwarka. These are younger in age than those at Dwarka, and the site also lacks stone anchors. The study of stone anchors of the Indian Ocean region, suggests that anchors from Dwarka fall between the 9th and 14th century A.D. Moreover these stone anchors also indicate that Dwarka was one of the active ports of India during early to late medieval times (Gaur *et al.* 2000). Stone anchors similar to Dwarka have also been reported from Bet Dwarka, Somnath, Aramada, Vijaydurg, Sindhudurg, Lakshadweep and Goa waters (Sila Tripathi *et al.* 2003b).

Bet Dwarka

Onshore and offshore explorations have also been carried out at Bet Dwarka Island. The findings confirm that Bet Dwarka was occupied for human settlement from the Protohistoric period (4000 years BP) till today. The findings include a seal, graffiti on three potsherds, pottery and shell bangles belonging to the late Harappan period, Kushana coins and pottery of the historical and medieval period, iron guns and Mughal coins. A historical period site was noticed near Khuda Dargha, which is submerged area of exploration on Bet Dwarka Island during high tide. This suggests changes in sea level at least after the Christian era. Underwater investigations off Bet Dwarka have brought to light various types of stone anchors, amphorae sherds and lead ingots (Sundaresh *et al.* 2002). The occurrence of amphorae sherds and lead ingots in Bet Dwarka waters, indicate the presence of a shipwreck belonging to the Roman period. The results of the exploration indicate that Okha Mandal region was occupied in order

to exploit the rich marine resources available. It is interesting to note that Harappans of Nageshwar and Bet Dwarka of Okha Mandal had direct contact with Harappans of the Gulf of Kachchh, rather than with Saurashtra, as is evident from ceramic studies.

Somnath

Prabhasa, which seems to have extended up to Somnath, was a flourishing port during Protohistoric times. Excavations at Prabhasa brought to light a warehouse on the banks of the river Hiranya. Near shore exploration between Veraval and the mouth of the river Saraswati during ebb tide brought to light six *lingas*, a few of which are still worshipped. The offshore explorations off Somnath, brought to light three ring stone anchors, triangular and Indo-Arabian type stone anchors (similar to the Dwarka anchors), dressed stone blocks and a rock cut channel (Rao *et al.* 1992). The subsequent underwater exploration brought to light a large number of ring stones, and triangular and Indo-Arabian type of stone anchors which are similar to those found at Dwarka and Bet Dwarka. The ring stone anchors lie in rock cut channels. Somnath has yielded a greater number of ring stone anchors than any other site in India (Gaur *et al.* 2002 a, b). However, explorations in Somnath waters did not yield any submerged habitational remains either of the Protohistoric or of the historical period.

Vijaydurg

Historical records indicate that frequent naval battles between Europeans and Maratha kings occurred at Vijaydurg, as a result of which a number of ships were either sunk or burnt in these water (Apte 1973). The main objective of underwater exploration and excavation off Vijaydurg waters was to locate shipwrecks. Diving, airlift and metal detector surveys were undertaken in Vaghotan creek and on the western side of the Vijaydurg fort at 8 to 10 m water-depth. The underwater exploration revealed a huge linear stone structure (122 m length, 7 m width and 3 m height) built of irregular stone blocks on the western side of the Vijaydurg fort. It is believed that the structure could be of the Maratha period. The airlift revealed coal, shale, slag and pottery of the medieval period from 2.5 to 3 m below the subsurface (Sila Tripathi *et al.* 1998a). In addition, a number of Indo-Arabian types of stone anchors, and a triangular stone anchor, were also located in the adjoining area of the dockyard. It appears that these anchors were used as mooring bits when the dock was in use. Besides, eight Indo-Arabian types of stone anchors were discovered which served as a lintel in the parapet wall of the second fortification of Vijaydurg fort. Both ends of the Indo-Arabian anchors are embedded in the wall and only the centre portions are visible.

Alternative uses of stone anchors have been noticed for the first time along the Maharashtra coast (Sila Tripathi *et al.* 1998b).

Malwan

Exploration revealed three triangular and five Indo-Arabian stone anchors at Sindhudurg fort, Malwan. These stone anchors were embedded on the platform of the jetty of the fort, and two Indo-Arabian stone anchors were used as mooring bits for canoes. Another Indo-Arabian stone anchor was noticed at the entrance, used as a lintel of the Padamgad fort, which served

as the shipyard of Shivaji (Apte 1973). All these anchors are made of locally available laterite and sandstone and are highly weathered. It appears that these anchors had been in use prior to the construction of the fort by Shivaji, the Maratha king.

During the 17th century, iron anchors were used extensively and stone anchors were abandoned. As the shape and size of these anchors are suitable for use in construction they were used for paving and mooring.

Satavahana coins have been reported from Kolhapur, closer to Malwan. Periplus has identified Malwan as Aurannoboas, and the earliest date for the maritime history of the Malwan region is of the Early Historic period. On this basis it is suggested that these stone anchors belong to a period ranging from the 3rd century B.C. to the 2nd century A.D. (Sila Tripathi and Gaur 1997).

Goa

Underwater exploration in Goa waters has brought to light two shipwrecks at Sunchi Reef and St George's Reef. The exploration at Sunchi Reef, around 2 km away from Mormugao port, yielded Martaban pottery brass barrel of a handgun, Chinese ceramics, eight elephant tusks of different sizes (58-36 cm in length) nine hippopotamus teeth lead pipe and pieces, metal handle 2 m long four iron guns datable to the 17th-18th century, a 1.218 kg cast iron gun shot, an Admiralty type of iron anchor, stone bricks, a number of well dressed granite blocks and square and round bases of glass bottles in 3 to 6 m water depth. The thermo luminescence dating of pottery shows that the Martaban pottery is 360+ 40 years old. The measured Carbon 14 age of the elephant tusks is 740 ± 130 years; the calibrated age range being 740-560 years BP.

Lakshadweep

Lakshadweep Islands lie on the sea route between West Asia and North Africa on one side and South Asia and the Far East on the other. Archaeological explorations carried out by the Archaeological Survey of India brought to light Roman gold coins from Kadmat, and Buddha heads from Androth and Minicoy (Sharma and Khan 1994). These coins and Buddha heads provide evidence for early settlement in the islands. Onshore explorations were carried out by the National Institute of Oceanography at Kavaratti, Androth, Agatti and Amini. Red polished ware (RPW), red ware, dull red ware, and buff ware were noticed at these islands. The scraping near the Ujira Habiwulla Mosque mound of Kavaratti brought to light a number of potsherds, the majority of them belonging to red ware, black ware and PRW. Large quantity of red ware, dull red ware and black ware were found in the habitation mound of Androth. Medieval pottery was found in the Jama Masjid, Majar and Waliullah Majar of Agatti. Red ware and coarse grey ware belonging to the Medieval and Early Historical Period were noticed in the foundation trench excavated for a public building at Amini (Sila Tripathi 1999). Offshore explorations in the Suheli Par Reef brought to light the remains of a shipwreck in the 6 to 15

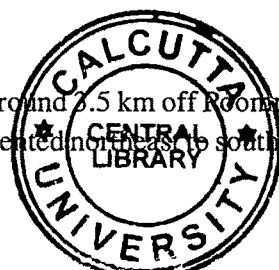
m water-depth. According to local information, three to four ships have wrecked here. Owing to choppy seas, it was not possible to dive nearer the reef for a close examination of the wreck. The remains of a Greek ship carrying Second World War surplus stores from Burma, was noted; grounded at night in December 1955 (Sila Tripathi and Gudigar 2001). Two shipwrecks were surveyed in 4 to 10 m water-depth, about 200 m seaward off Minicoy Island. The first wreck is oriented north-south and is parallel to the shore. The other wreck lies to the north of this. The shaft attached to the engine is in good condition and steam boilers were noticed (Gaur *et al.* 1988; Rao *et al.* 1995-96b). Some parts of these wrecks lie in deep waters. They are well preserved and belong to the transition phase between wood and iron and sail and steam. Explorations of steam engine wrecks are rare; hence it is important to explore these wrecks of Lakshadweep for marine archaeological research.

Poompuhar

Poompuhar, a port town (3rd century B.C.-3rd century A.D.) is situated at the confluence of the River Kaveri and the Bay of Bengal on the east coast of India. *Sangam* texts describe the layout of the port city, harbour, warehouse, and the export and import of articles from this port. Excavations at Poompuhar and adjoining areas brought to light a 'T' shaped brick wharf at Kilaiyur, a reservoir at Vanagiri and a Buddha Vihara near the Pallavaneswaram temple (Soundar Rajan, 1994). The Department of Archaeology, Government of Tamil Nadu and the National Institute of Oceanography, Goa carried out offshore explorations to locate the port installation remains in the sea, in 1981. The exploration revealed some conspicuous objects, which could not be identified since diving was not undertaken (Vora, 1987). Marine archaeological explorations were also carried out in Poompuhar waters from 1989 onwards. Onshore explorations between Poompuhar and Tranquebar revealed ring wells, early historical pottery, brick structures, inscribed potsherds, Chola coins, semiprecious stones and terracotta beads; as well as red ware of the medieval period. A brick structure exposed in the intertidal zone, about 200 m south of the Kannagi statue, was excavated. The structure is aligned parallel to the shore (Sila Tripathi *et al.* 1996). Offshore exploration involved both visual and geophysical surveys. Airlifting was carried out extensively off Poompuhar at different water depths, and yielded brick bats, red ware, black and red ware, a sherd of amphora and some courses of dressed blocks, which are square and rectangular in shape. A 'LP' shaped stone structure (40 x 20 x 3 m) lying in a north-south direction and in two parts was noted at 23 m water depth. The depression of about 1 m was noted at the centre of the structure. A smaller structure was noticed about 40 m to the north. These structures are highly disturbed, broken in several pieces and covered with fishing nets. Many explanations have been suggested regarding the structure, none of which can be substantiated as yet.

Shipwreck in Poompuhar Waters

A wooden hulled shipwreck was located at 19 m water depth around 3.5 km off Poompuhar (Gaur *et al.* 1997). The wreck is distributed in two parts and lies oriented north-east to southwest.



A metal detector survey confirms that about 75% of the ship is buried within sediments; where as echo sounder surveys indicate that the height of the wreck may be around 2.5 to 3 m. Other important findings at the site are a 2.1 m long gun and three gunpowder boxes on the eastern side. A large number of lead ingots bearing the inscription 'W. BLACKETT' on one side; and '1791-92' on the other, along with merchant marks, were lying on the southern side. The gun is fixed on an iron platform, which makes it difficult to lift. Wooden planks and copper nails were also noticed on the wreck. Woodborer molluscs affected the upper wooden planks, while the lower planks were intact. The rudder gudgeon along with copper nails and a rudder pintle which were lying 10 m away, to the north of the wreck, were recovered along with 18 lead ingots of various types. Based on physical features, the ingots are classified into four categories based on their shapes, weight and markings. To know the provenance and quality of lead; isotopic and trace metal analyses were carried out. These indicate that W. Blackett used high purity lead for manufacturing ingots, and that the main source for lead ingots was the North Pennine ore fields of Britain. The wreck is well preserved and needs to be excavated thoroughly. The year stamped on the ingots, 1791 and 1792, indicate the dates of manufacturing and the vessel might have been wrecked some years later. The finding of lead ingots confirms that there was trade contact between the W. Blackett Company and India, but merchant marks suggest this was through middlemen and not direct. The Poompuhar wreck is the first wreck so far reported from the East Coast of India. (Sila Tripathi *et al.* 2003c). Surface exploration at Kilaiyur, a part of Kaveripattinam, in the years prior to 1963 had yielded square copper coins with tiger emblem which was the royal crest of the early Cholas. Other finds include beads of semi-precious stones and amphora pieces. The most significant discovery was an 'I'-shaped brick structure, exposed in the ancient channel of Kaveri at Kilaiyur which is now completely silted.

Mahabalipuram

Numerous references suggest that Mahabalipuram was a flourishing port in the early centuries of the Christian era and this situation continued till the Pallava period in the 8th century A.D. It is believed that out of seven temples constructed in Mahabalipuram, only one remains, with the rest being submerged. Preliminary underwater investigations off Mahabalipuram were carried out to locate the remains of submerged temples. The exploration yielded structures such as walls and scattered blocks in 5 to 8 m water-depths about 800 m away from the present shoreline. The structures were badly damaged due to strong underwater currents, swells and thick marine growth. On the basis of archaeological evidence of the region around Mahabalipuram, the earliest possible date of these structures could be around 1500 years BP. Folklore and legends in fact, have the potential to provide many clues which help in underwater archaeology. Excavations by National Institute of Oceanography in 2002 revealed some amount of truth in these tales. According to Vora, underwater investigations showed the presence of the remains of walls as well as large stone blocks, which seemed to correspond to the time period of the surviving shore temple. Excavations carried out by ASI

in 2005 also revealed the remains of two structural temples, found near the shore temple. The major causes for the submergence of these structures include severe coastal erosion, and minor sea level fluctuations. Extensive excavation and removal of marine growth are required to understand the layout, plan, purpose and other details of these structures (Sundaresh 2003).

In an underwater exploration in the Gulf of Cambay, National Institute of Ocean Technology (NIOT) scientists discovered almost 9,500-year-old bricks made of clay and straw. Archaeological experts of the MS University who, too, are involved in a part of the exploration near Surat and the coast of Gulf of Cambay, however, feel that a further insight into the size of the bricks can confirm its age and its period. The bricks, believed to be pre-Harappan, have been identified to be of the Holocene age. In the NIOT surveys around the 17 sq km area, stone artefacts like blade scraper, perforated stones and beads were found. The bricks, according to NIOT scientists, were used for construction. It indicates that the people of that age led an advanced form of life. The artefacts found on the sea-bed, 20 to 40 ft below the present sea level, consisted of housing material. "It is important to confirm the brick size as people of the pre-Harappan age made bricks in the ratio of 1:2:3. A confirmation on the brick size can add more credence to the discovery," remarked V. H. Sonawane, the head of the archeology and ancient history department of the MS University, Baroda.

Onshore explorations of Early Historical port sites such as Sopara, Chaul, Kalyan and Rajbandar (Elephanta Island), Ratnagiri, Dabhol, Janjira on west coast and Kalingapatnam, Palur, Manikapatna, Khalkatapatna, region surrounding the Chilika Lake, Bimlipatnam, Bavikonda, Thotlakonda on east coast, yielded various types of pottery, beads, copper coins terracotta ring wells, Chinese ceramics and brick structures of the Historical period.

HERITAGE AT RISK AND ITS RECOVERY

Ancient port city uncovered by Tsunami

Archaeologists have discovered some stone remains from the coast close to India's famous beach front Mahabalipuram temple in Tamil Nadu state following the tsunami on December 26, 2004. They believe that structures could be the remains of an ancient and once-flourishing port city in the area housing the famous 1,200-year-old rock-hewn temple. Three pieces of remains, which include a granite lion, were found buried in the sand after the coastline receded in the area after the tsunami struck. They could be part of the small seaport city which existed here before water engulfed them. These could be part of a temple or a building according to the archaeologists of the Archaeological Survey of India. The stone remains date back to 7th Century AD and are nearly 6ft tall. They have elaborate engravings of the kind that are found in the Mahabalipuram temple, the earliest-known examples of Dravidian architecture dating back to 7th century. The monument also has gigantic open air reliefs hewn out from granite. The tsunami waves have also helped the archaeologists in desilting one such relief which had been covered with sand for ages. A half-completed rock relief of an elephant got naturally desilted by the ferocious waves. For the past few years, archaeologists working with divers from India and England had done underwater surveys 1 km into the sea from the temple and found some undersea remnants of the ancient port..

If the Shore Temple is determining the dates of the structures the sea level (about 1200 years old) is the last surviving structure, and then has fluctuated between 2 m and 6 m about two–three times during mid-Holocene period on both the coasts of India. It is reasonable to believe that other submerged temples in the sea are also of the same age. The sea level fluctuation has been documented on the severe erosion at Kalpakkam, south of Mahabalipuram and around Mahabalipuram. One of the inscriptions of Narasimha I mentions that he is the first person to introduce the construction of caves and temples. A recent study suggests the rate of coastal erosion in and around Mahabalipuram is 55 cm/yr.

The archaeology of Mahabalipuram commences from the early centuries of the Christian era, as a few Roman and Chinese coins were found. Two Pallava coins bearing legends read as *Srihari* and *Srinidhi* have been reported in and around Mahabalipuram. The zenith of human habitation around Mahabalipuram was during the Pallava dynasty, therefore, and arguably, these temples may not be older than 1500 years BP.

A team of underwater archaeologists from National Institute of Oceanography have successfully unearthed evidence of submerged structures off Mahabalipuram and established first-ever proof of the popular belief that the Shore temple of Mahabalipuram is the remnant

of series of total seven of such temples built that have been submerged in succession. The discovery was made during a joint underwater exploration with the Scientific Exploration Society, U.K.

Underwater investigations were carried out at five locations in the 5– 8 m water depths, 500 to 700 m off Shore temple. Investigations at each location have shown presence of the construction of stone masonry, remains of walls, a big square rock cut remains, scattered square and rectangular stone blocks, big platform leading the steps to it amidst the geological formations of the rocks that occur locally. Most of the structures are badly damaged and scattered in a vast area, having biological growth of barnacles, mussels and other organisms. The construction pattern and area, about 100m X 50m, appears to be same at each location. The actual area covered by ruins may extend well beyond the explored locations. The possible date of the ruins may be 1500-1200 years BP.

The epigraphical sources also say that the Pallava kings had active overseas contacts with Sri Lanka, China and the Southeast Asian countries. A few Roman coins of Theodosius (4th century AD) were found, which suggest that Mahabalipuram had trade contact with the Roman world around the Christian era. Pallava king Sihmavarman led two expeditions by embarking two ships from Mamallapuram–Pallava embassy and Vajradanthi, the famous Buddhist monk, who introduced Mahayana Buddhism to Sri Lanka sailed to China from Mamallapuram port. Archaeological excavations near Punjeri village, about 1.5 km west of Mahabalipuram revealed the remains dating back to the early historic and medieval periods. The excavator has suggested that this place could have served as an ancient port

Treasure of the Great Basses Reef

A lump of 1701 Surat silver rupees from the shipwreck at the Great Basses reef off the south east coast of Sri Lanka near Kirinda was discovered on 1961 March 22nd by Arthur C. Clarke, the celebrated science fiction writer and author of *2001: A Space Odyssey* and also his associate Mike Wilson.

The silver rupee minted in Surat was issued by Muhammad Aurangzeb Alamgir (1658-1707), with Islamic date 1113 AH (1701). The coins appeared to have been packed in coir sacks with about 1000 coins each and perhaps packed in several sacks to a wood chest. The coir bags held the coins which have been concreted solidly together, so that when the sacks rotted away, the coins remained in twenty five pound lumps in the shape of the sack. The coins in the middle of the lumps were in perfect mint condition. The inner side of the outer coins was similarly protected as was the reverse of the coin shown.

The Smithsonian Institute of America received a 1,000 rupee lump soon after the discovery of the unrecorded wreck on the Great Basses Reef off the south east coast of Sri Lanka. The Accession record no. 239761 dated December 7, 1961 describes a gift made to the Smithsonian

by Arthur C. Clarke as '*1 cluster of approx. 1000 silver rupees dated 1702, found off Great Basses Reef, Ceylon by Mr. Mike Wilson*'. Appendix C of Clarke's book notes contains supplied by Mendel Peterson, former Curator of Underwater Exploration for the Smithsonian Institution, on the *Preservation of objects recovered from the Sea*.

This lump of coin was last shown in public at the *Aditi - The Monies of India* exhibition at the National Museum of American History from 1985 October 24, till 1986 April 24. An image of it appears in the interesting exhibition souvenir.

Paul Johnston, Curator of Maritime History informs that the underwater collections gathered back in the 1960's by Mendel Peterson, currently has this item, and sent him photograph of it. Thousand coins as shown on right in loosely sacked lump is about a 8 inch cube (well packed 4x4x62 coins it will be about 4.3 inch cube)

In 1992, Capt. Carl Fisser acquired the personal collection of Great Basses Reef treasure from a retired Smithsonian Curator Mendel Peterson, and discovered the exciting history of the silver rupees minted in Surat,

Fisser dubbed the coins as the Taj Mahal Sunken Treasure, and traveled to Sri Lanka to visit the reclusive Clarke to hear the first hand story of the Treasure of the Great Reef. Worth nearly one million dollars, the *Taj Mahal Sunken Treasure* consists of a cluster of over 750 silver rupee coins still in the shape of the sack that once carried them, and another 425 individual coins. Capt. Carl Fisser kept with him the 750 coin cluster for a few last showings before it was sent to Sri Lanka's Maritime Museum to replace their portion of the treasure reclaimed by the sea in the 2004 Tsunami.

The history of the Taj Mahal Sunken Treasure is a bitter sweet story of love and loss, conspiracy and murder, and finally, sunken treasure and Clarke's last dive before he passed away on March 19th 2008. From the archaeological evidence discovered during the recovery, combined with trade route history, Capt. Carl Fisser believes the rich silver rupees most likely would have been loaded on a Muslim trader in Surat, India and sent to Ceylon to buy gems and spices that would then be used to trade for Oriental treasures to be returned to India. Perhaps for Emperor Aurangzeb himself. But we will never know as the ship struck Great Basses Reef off the southern tip of Ceylon in 1702. There were no survivors, and the glittering treasure was lost to the world until Clarke and company recovered it in 1963.

Submerged sites and sunken shipwrecks are our cultural heritage. It is critical for us to decipher these records and link the past with the present. Rampant developmental activities in coastal zones might have destroyed evidence of bygone civilizations forever. Therefore, it is imperative to make marine archaeological investigations mandatory in coastal zones, where any kind of developmental activities occur in the form of ports, harbours, industry, tourism, etc. In India, very few shipwrecks have been explored, although the rate of salvage of

shipwrecks is higher. Unless this is stopped, evidence will be destroyed forever. Archaeological evidence, if found, must be reported to authorities to prevent its destruction. In addition to this, submerged port and shipwreck sites can be promoted for tourism.

Salvaged monuments at Nagarjunakonda

On the right bank of the Krishna, the valley now submerged was first brought to light in 1926 by A. R. Saraswati of the ASI. Explorations by Kuraishi and Sastri in the same year and excavations carried out subsequently by Longhurst (1927-31) and then by Ramachandran (1938) indicate an extensive Buddhist settlement that came up during the rule of the Ikshvakus who had their capital Vijayapuri in this valley itself. But the large-scale excavations, which commenced in 1954 consequent on the decision of turning the hill-girt valley into a reservoir of the Nagarjunasagar dam across the Krishna, revealed the cultural sequence from the lower Palaeolithic to the mediaeval times, besides unearthing the remains of the city of Vijayapuri, which flourished mainly in the 3rd - 4th centuries AD. Sites numbering more than 130 were spread over an area of 23 sq km inside the valley, closed on all sides by the hills of the Nallamalai Range. These sites may broadly be divided into seven periods spanning over from the lower Palaeolithic to the mediaeval period.

The mediaeval hill fort that came up on the hill Nagarjunakonda, because of its strategic location near the fordable point, contains three mediaeval temples which have escaped submergence. It may be mentioned here that the name Nagarjunakonda occurs only in mediaeval records and does not seem to have any connection with Nagarjuna, the Buddhist philosopher of the second century A.D. Anyway it is on this hill, now transformed into an island, that some of the reconstructed monuments like the Bathing Ghat, Sites 4, 93, etc., have been built; the Museum on this island contains not only the salvaged relics but also scale-models of the sites, now under water. A few reconstructed monuments, include the open-air theatre, may also be seen on the bank of the modern reservoir near the jetty. The programme of reconstruction of transplantation of ruins of monuments has been a unique venture, the first of its in India.

Nagarjunakonda Museum attempts to preserve the excavated remains of the Buddhist civilization at Nagarjunakonda. The exquisite sandal stone sculptures in this historical Museum are sure to impress any visitor. The chief attraction is the monolithic statue of Lord Buddha. The magnificent statue stands tall and the posture is very graceful. The expression of peace and poise is really amazing. Apart from this elegant statue, there are several exquisitely carved stone slabs in the Nagarjunakonda Museum. The carvings in the slabs depict the life of Buddha. They adorned the *stupas* at one point of time. In fact there is a tooth and an ear ring in the Museum which supposedly belonged to the Buddha himself.

Other valuable exhibits of the Museum include tools which belonged to the Palaeolithic and Neolithic age. There are coins, jewellerys and friezes belonging to prehistoric times.

Third gallery houses models of the submerged valley along with models of secular and religious edifices. On the floor of the hall is the model of the valley with its topographical environs locating over 120 excavated sites. In the wall show-cases all around, are models of important excavated sites and remains. These include Neolithic and Megalithic burials; *stupas* showing a variety of plan including the *mahastupa*; *viharas* such as the Mahisasaka, Bahusrutiya and Kumaranandi vihara; Brahmanical temples dedicated to Sarvadeva, Kartikeya, Pushpabhadrasvamin, Ashtabhujaasvamin etc. and secular edifices like the amphitheatre bathing ghat etc.

Submerged temples at Telkupi

A submerged temple site in West Bengal, Telkupi was once a land of temples with rich cultural heritage and tradition. The region had a large number of temples within a small space. While in the yesteryears, the number of temples existing in the area numbered about 20, the figure came down drastically with time. Today Telkupi is home to only two shrines while one is visible half- submerged in the Damodar reservoir, at the Panchet Dam. Telkupi, a village under Raghunathpur police station, was submerged with the construction of the Panchet Dam. It was the capital of Tailakampa kingdom, of which Panchakot Raj was probably a part. The ruins of the fort of the Singh Deo dynasty of Panchakot located at the southern foothills and a group of temples are still standing as mute spectators of the rise and fall of the dynasty. Telkupi was under the Rajas of Panchet and Kashipur in the area called Shikharbhum which was the old name of Hazaribagh district until the arrival of the British in the eighteenth century, and when Dhanbad was within the district. Telkupi is about a hundred and thirty kilometers southeast of the Jain temple centre of Parasnath Hill, and thirty kilometers south of Dhanbad town today.

J.D.Beglar who had documented temples 2, 3, 4, 5, 6, 7, 8, 12, 15, and 18 in 1872-73 described them as 'containing, perhaps, the finest and largest number of temples within a small space that is to be found in the Chutia Nagpur Circle in Bengal'. He listed over twenty temples and referred to several others and to 'numerous mounds, both of brick and stone but more of brick'. According to Bradley-Birt (1903) these were ancient Jain temples appropriated by the Hindus and that some Jaina images of Tirthankaras are being worshipped in the temples as Hindu deities. Beglar also noted an image of the Sun god.

During the mid-1950s the fate of the twenty-odd temples at a place ancestrally known as Bhairavasthan was sealed during the submergence of a large area along the banks of the river Damodar on the border of Jharkhand and Bengal through the construction of the Panchet Dam across the river. Bhairavasthan was some nine kilometers from Telkupi on the south bank of the river Damodar. For the archaeological heritage of India it was a catastrophe apart from the human and ecological aspects. Hundreds of villages were submerged in over six large dams and thousands of smaller dams. When the local villagers saw the waters of the

Damodar river rising in 1957 they immediately informed the Archaeological Survey of India in Calcutta, and asked it to immediately arrange for the translocation of these stone and brick temples dating back to the 9th century during the Pala period.

Debala Mitra wrote in the Preface to her monograph on Telkupi (1969) that most of the temples and the greater part of the village had gone under water and only the tops of Temples 6, 8, 9, 10, 14, 15 and 16 protruding above the waters of the Damodar, and temples 17 and 18 standing at the edge of the water. Calling the submerged ones 'the Ghost Temples of Telkupi' the villagers even now say that in the evening they can hear *kirtans* being sung across the waters and boatmen pray before entering the waters lest they by mistake guide their craft over a temple. The local traditions ascribe Telkupi as the place where the legendary Jain king Vikramaditya used to come from Dulmi for necessary ointment before ablution.

The earliest report of the Telkupi Temples was prepared by J. D. Beglar who visited the place on two occasions. His report records three clusters of temples, the largest consisting of thirteen temples on the banks of the river Damodar which was known as the Bhairavasthan. The one that is half under water towards the other side of the lake is No. 10 of Beglar's list, a late structure, probably of the time of Man Singh, with an ugly *shikhara* divided up by horizontal ridges and two *mandapas* with pyramidal roofs in these sections. Beglar's No. 10 is one of his first group of thirteen, all of which must have been submerged. The two temples that are standing now on the very edge of the river seem to belong to Beglar's second group, although one of them contains a *linga*, whereas Beglar's second group contains only Vaishnava temples.

W.W. Hunter in his work *Statistical Account of Bengal* (List of Ancient Monuments of Bengal, 1896) refers to 'eight or nine of these temples at Telkupi on the Damodar'. He refers to the image of Bhairava being worshipped. Hunter also refers to Bhairavasthan as a Jain site with some Buddhist influence too. This is an important factor in trying to understand the early nature of the site in the Pala period when the temples were built and when the local religion was Buddhist and Jain. The temples originally might have numbered over forty. In 1903 Theodor Bloch of the Archaeological Survey refers to the temples, and specifically mentions about the worship of Bhairava, Kali (Tara?), Mahadeva (Shiva), Linga (Shiva), and Surya (Avalokitesvara?). Bloch visited the place in 1902, when the number of the well-preserved temples had diminished considerably, as he found ten, more or less complete temples. W. W. Hunter suggested that the image of Bhairava from which Bhairavaasthan gets its name, was of lord Mahavira, the 24th Tirthankara of the Jains. In the opinion of F. B. Bradley-Birt the statuary was of Jaina faith (*Chota-Nagpore: A Little-Known Province of the Empire*, 1903/1910, p. 181). In the INTACH survey of Jaina monuments of South Jharkhand (Purulia, Seraikela, 2006) the Jaina statuary was invariably found in the sites with similar temple architecture as the Bhairavasthan temples of Telkupi. There is therefore every reason to assume that Telkupi was a Jaina temple cluster. Obviously, the temples were originally sites of Jaina worship before or during the Pala period. Debala Mitra in 1959-60 observed the images of

Mahishasuramardini, Ganesa, and Uma Mahesvara of the late Pala period submerged under the waters. She also noted a submerged Vishnu image in Temple 9, and an Ambika, and Andhakasura-vadha statue in the porch of Temple 10. Many villages apart from Telkupi were submerged along with their temples and statuary by the Panchet Dam.

More than 20 temples belonging to the 8th through 12th centuries were submerged between 1956 and 1962 by the waters of the Damodar river. Although sometimes the remains of these ruined temples become visible in the silted-up reservoir, a most precious heritage site is lost here forever.

Recovered monuments at Aswan in Egypt

The Aswan Dam is an embankment dam situated across the Nile River in Aswan, Egypt. Since the 1950-s, the name commonly refers to the High Dam, which is larger and newer than the Aswan Low Dam, which was first completed in 1902. Following Egypt's independence from the United Kingdom, the High Dam was constructed between 1960 and 1970. It aimed to increase economic production by further regulating the annual river flooding and providing storage of water for agriculture, and later, to generate hydroelectricity. The dam has had a significant impact on the economy and culture of Egypt.

The Aswan High Dam is 3,830 meters long, 980 meters wide at the base, 40 metres wide at the crest and 111 metres tall. It contains 43 million cubic metres of material. At maximum, 11,000 cubic metres per second of water can pass through the dam. The reservoir, named Lake Nasser, is 550 km long and 35 km at its widest with a surface area of 5,250 square kilometers. It holds 111 cubic kilometers of water.

A number of historical monuments were located in the area that was flooded by Lake Nasser. UNESCO and the Egyptian authorities transferred many of them to higher ground, including Abu Simbel, Philae, Kalabsha and Amada, which are important tourism attractions today.

One problem that the dam caused was that the current location of Lake Nasser covers the sites of many ancient Egyptian monuments including the Temple of Philae and Abu Simbel, the site of a great temple that was cut out of solid rock in the 13th century BC. These rock-cut temples are located in the ancient Wawat (or the legendary Ybsambul) in Nubia, near the borders of Sudan, about 300 kilometers from Aswan. Earlier temples in Nubia had been located within forts, but here the confidence of Ramesis II whose reign may have lasted as many as 67 years, is illustrated. These temples, probably once brightly coloured, were cut into the natural rock and lapped by the Nile. After eleven centuries of oblivion, these temples were rediscovered in 1813 when Johann Ludwig Burkhart saw by accident the upper parts of the colossal figures. In 1817 Giovanni Battista Belzoni found the entrance, partially freed from the sand. In the following years these temples were often partially covered by shifting sands.

Today visitors see the reconstructed temples now relocated on higher ground (60 meters directly above their earlier position) after the heroic international rescue efforts to save these treasures from Lake Nasser.

To save this site, and also Philae temple, these great monuments were moved stone by stone, to new locations where they would not be damaged by the water released as the dam was finished. This took a great deal of money and a lot of time and effort, but both of these monuments and some others were moved successfully and can still be visited today.

The foregoing account on keeping the heritage in tact and safe for the present and future involves multi-dimensional considerations. Both institutional and individual awareness may help paving the way for a better heritage keepsake. It is also essential to guard against criminal vandalism often committed extensively on the vestiges of art and architecture. The protective measures or legislative bindings are not sufficient safeguard. The natural or man-made disaster can pose a potential threat to the heritage treasures. Effective disaster management can reduce such possibility, help minimize their impact and facilitate safety and safeguard of the cultural properties. Promoting heritage education should be the motto of a nation rich in archaeological wealth and indigenous traditions. It is heartening to note that keeping heritage alive or legacy preservation has become a sort of social movement all over the world. On the contrary, the challenging impact of global warming remains now a threatened subject of heritage policy concern. A concerted effort is therefore needed to keep our heritage alive.

Appendix-I

Alphabetical List of Monuments –West Bengal

Kolkata Circle- West Bengal

Sl. No.	Name of Monument / Sites	Location	District
1	Chandraketu's Fort	Berachampa	24 Parganas (North)
2.	Ancient mound known as Baraha Mihirer Dhipi also known as Khana Mihirer Dhibi	Deulia & Kaukipara	24 Parganas (North)
3.	Clive's House at Dum Dum known as Barakothi	Dum Dum	24 Parganas (North)
4.	26 Siva Temples	Barrakpore Khardah	24 Parganas (North)
5.	Warren Hasting's House	Barasat	24 Parganas (North)
6.	Jhatar Deul Temple	Jhata	24 Parganas (South)
7.	Ancient Temple	Bahulara	Bankura
8.	Dalmadal Gun and the platform on which it is mounted	Bishnupur	Bankura
9.	Gate of Old Fort	Bishnupur	Bankura
10.	Jore Mandir	Bishnupur	Bankura
11.	Jore Bangla Temple	Bishnupur	Bankura
12.	Kalachand Temple	Bishnupur	Bankura
13.	Lalji Temple	Bishnupur	Bankura
14.	Madan Gopal Temple	Bishnupur	Bankura
15.	Madan Mohan Temple	Bishnupur	Bankura
16.	Malleswar Temple	Bishnupur	Bankura
17.	Murali Mohan Temple	Bishnupur	Bankura
18.	Nanda Lal Temple	Bishnupur	Bankura
19.	Patpur Temple	Bishnupur	Bankura
20.	Radha Binod Temple	Bishnupur	Bankura
21.	Radha Gobinda Temple	Bishnupur	Bankura
22.	Radha Madhab Temple	Bishnupur	Bankura
23.	Radha Shyam Temple	Bishnupur	Bankura

24.	Rasmancha	Bishnupur	Bankura
25.	Shyam Rai Temple	Bishnupur	Bankura
26.	Small gateway of fort	Bishnupur	Bankura
27.	Stone chariot	Bishnupur	Bankura
28.	Saileswar Temple	Dihar	Bankura
29.	Sareswar Temple	Dihar	Bankura
30.	Temple of Radha Damodar Jiu	Ghatgoria	Bankura
31.	Gokul Chand Temple	Gokulnagar	Bankura
32.	Temple of Ratneswar	Jagannath pur	Bankura
33.	Temple of Shyam Sundar	Madanpur	Bankura
34.	Temple site now represented only by a mound and a statue of Surya	Pareshnath	Bankura
35.	Temple site of an old Jain Temple now represented only by a mound with a Jain statue	Pareshnath	Bankura
36.	Image of Durga slaying Mahisasura under a tree	Sarengarh	Bankura
37.	Temple site now represented only by a mound	Sarengarh	Bankura
38.	Temple site now represented only by a mound with statues of Ganesh and Nandi on it	Sarengarh	Bankura
39.	Temple site now represented only by a mound with an image of Nandi on it	Sarengarh	Bankura
40.	Rock Inscription of Chandravarman	Susunia Hill	Bankura
41.	Temple of Radha Binod commonly known as Joydeb	Joydeb-Kenduli	Birbhum
42.	Temple of Dharmaraj	Kubilashpur	Birbhum
43.	Two mounds	Bhadeswar	Birbhum
44.	Temple of Basuli and the mound together with fourteen other temples near them containing the linga images of Shiva	Nanoor	Birbhum
45.	Temple and Rasmancha (Damodar Temple)	Suri	Birbhum

46.	Two ancient temples (joined together)	Baidyapur	Burdwan
47.	Rudreswar Temple	Bamunara	Burdwan
48.	Group of four Ancient Temples	Begunia	Burdwan
49.	Tomb of Baharam Sakka, Sher Afghan and Nawab Qutabuddin	Burdwan	Burdwan
50.	Stone Temple	Garui	Burdwan
51.	Temple of Ichai Ghosh	Gourangpur	Burdwan
52.	Ancient site	Nadhia	Burdwan
53.	Jain brick temple known as Sat-Deul	Deulia	Burdwan
54.	Group of temples (12 nos. temples)	Kalna	Burdwan
	(i) 1 Bijoy Vaidyanath Temple		
	(ii) 2 Giri Gobardhan Temple		
	(iii) 3 Gopalji Temple,		
	(iv) Jaleswar Temple		
	(v) Krishna Chandraji Temple		
	(vi) Lalji Temple,		
	(vii) Nava-Kailasha Temple		
	(viii) Pancharatna Temple		
	(ix) Pratapeswar Siva Temple in Rajbari compound		
	(x) Rameswar Temple,		
	(xi) Ratneswar Temple		
	(xii) Rupeswar Temple		
55.	Ancient site and remains of Pandu Rajar Dhipi	Panduk	Burdwan
56.	Ancient mound	Bharatpur	Burdwan
57.	Cooch Behar Palace	Cooch Bihar	Cooch Bihar
58.	Rajpath Site	Khalsa Gasanimari	Cooch Bihar
59.	Tomb of Alexander-Cosma de Koros	Darjeeling	Darjeeling
60.	Tomb of General Llyod	Darjeeling	Darjeeling
61.	Dargah of Shah Ata	Gangarampur	Dinajpur (South)
62.	Mounds	Bangarh (Gangarampur)	Dinajpur (West)
63.	Hamseswari and Vasudev temples	Bansberia	Hooghly
64.	Dutch Cemetery together with all tombs & monuments contained therein	Chinsurah	Hooghly

65.	Dutch memorial monument of Susan Anna Maria	Chinsurah	Hooghly
66.	Group of temples known as Brindaban Chandra's Math	Guptipara	Hooghly
67.	Mounds	Mahanad	Hooghly
68.	Minar	Pandua	Hooghly
69.	Mosque	Pandua	Hooghly
70.	Mosque & Tombs	Satgaon	Hooghly
71.	i) Danish Cemetery ii) All ancient structures, all tombs stone monument remains and inscriptions within the area enclosed by the said walls	Serampore	Hooghly
72.	Shrine and Mosque known as Dargah of Zafar Khan Gazi	Tribeni	Hooghly
73.	Dupleix Palace (Institute de Chandan Nagar)	Chandan Nagar	Hooghly
74.	Sri Mayer Ghat	Howrah	Howrah
75.	Metcalf Hall	Kolkata	Kolkata
76.	St. John's Church (Fabrics of the Church) (final notification not issued)	Kolkata	Kolkata
77.	Currency Building	Dalhousie Square	Kolkata
78.	Asiatic Society Building	Park Street	Kolkata
79.	Maghen David Synagogue	Ward No. 45	Kolkata
80.	Beth-el-Synagogue	Pollock Street	Kolkata
81.	Adina Mosque	Pandua (Adina)	Malda
82.	Baisgazi Wall	Gaur	Malda
83.	Baraduary Masjid or the Great Golden Mosque	Gaur	Malda
84.	Bhita of Chand Sadagar	Gaur	Malda
85.	Chamkati Masjid	Gaur	Malda

86.	Chika Masjid	Gaur	Malda
87.	Dakhil darwaza	Gaur	Malda
88.	Firoz Minar	Gaur	Malda
89.	Gumti Gateway	Gaur	Malda
90.	Gunmant Mosque	Gaur	Malda
91.	Kotwali Darwaja	Gaur	Malda
92.	Lottan Masjid	Gaur	Malda
93.	Lukachuri Gateway	Gaur	Malda
94.	Qadam Rasul Mosque	Gaur	Malda
95.	Tomb of Fateh Khan	Gaur	Malda
96.	Tantipara Masjid	Gaur	Malda
97.	Two tombs in front of Tantipura Masjid	Gaur	Malda
98.	Two stone pillars	Gaur	Malda
99.	Tower	Nimasarai	Malda
100.	Eklakhi Mausoleum	Pandua	Malda
101.	Qutub Shahi Masjid	Pandua	Malda
102.	Dharmaraj Temple	Pathra	Midanapur
103.	Temples of Bandyopadhyay Family	Pathra	Midanapur
104.	Sitala Temples	Pathra	Midanapur
105.	Navaratna Temple Complex	Pathra	Midanapur
106.	Kurambera Fort	Gaganeswar	Midnapore
107.	John Pierce Tomb	Midnapore	Midnapore
108.	Tomb of Azimunnisha Begum daughter of Murshid Quli Khan	Azimnagar	Murshidabad
109.	Residency Cemetery also known as 'Station Burial ground'	Babulbona Beharampore	Murshidabad
110.	Bhavaniswar Mandir	Baranagar	Murshidabad
111.	Char Bangla group of four Siva Mandir	Baranagar	Murshidabad

112.	Tomb of Mir Mardan	Faridpur	Murshidabad
113.	Dutch Cemetery	Kalikapur	Murshidabad
114.	Old English Cemetery or Old Residency Burial Ground	Kashim Bazar	Murshidabad
115.	Mosque	Kheraul	Murshidabad
116.	Tomb of Alivardi Khan & the tomb of Siraj-ud-daullah	Khosbag	Murshidabad
117.	Mound known as Barkona Deul Mound	Panchthupi	Murshidabad
118.	Mounds known as the Devil's Mound and Raja Karna's Palace	Rangamati	Murshidabad
119.	Tomb of Sujauddin	Roshnibag	Murshidabad
120.	Tomb & Mosque of Murhsid Kuli Khan	Sabz Katra	Murshidabad
121.	Jahan Kosa Gun	Topkhana	Murshidabad
122.	Hazarduari Palace & Imambara (Murshidabad)	Killa Nizamat	Murshidabad
123.	South Gate, Kella Nezamat	Lalbag	Murshidabad
124.	Imambara, Kella Nezamat	Lalbag	Murshidabad
125.	White Mosque, Kella Nezamat	Lalbag	Murshidabad
126.	Yellow Mosque, Kella Nezamat	Lalbag	Murshidabad
127.	Tripolia Gate, Kella Nizamat	Lalbag	Murshidabad
128.	Nil Kuthi Mound	Mouza Chak , Chandpara	Mursidabad
129.	Mound known as Bahanpukur Mound or Fort	Bamanpukur	Nadia
130.	Ruins of Fort	Bamanpukur	Nadia
131.	Temple	Palpara	Nadia
132.	Tamluk Rajbati	Padumbasan, Tamluk	Purba Medinipur
133.	Old Temple at Banda	Banda	Purulia

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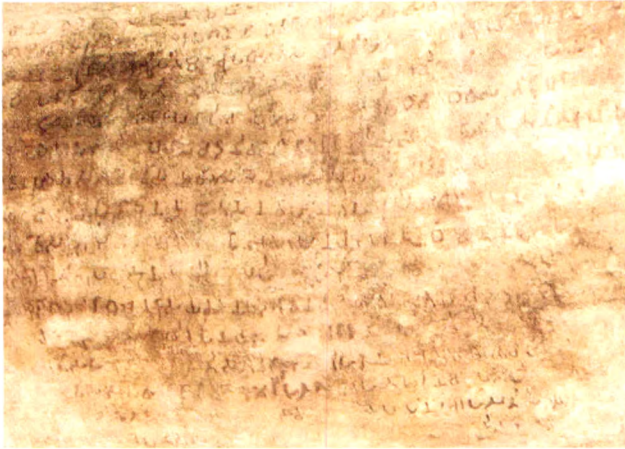
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ILLUSTRATIONS



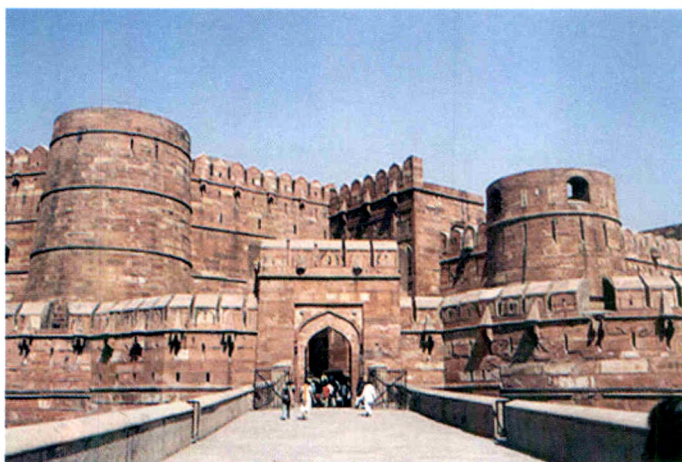
Hathigumpha Inscription of Kharavela



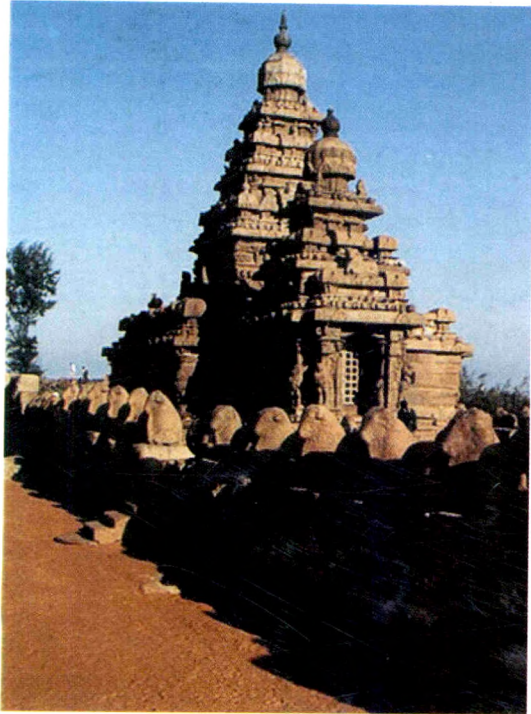
Musical pillars at Vitthala temple



Musical pillars at Minakshi temple



Agra Fort



Group of monuments, Mahabalipuram



Ellora Caves



Ajanta Caves



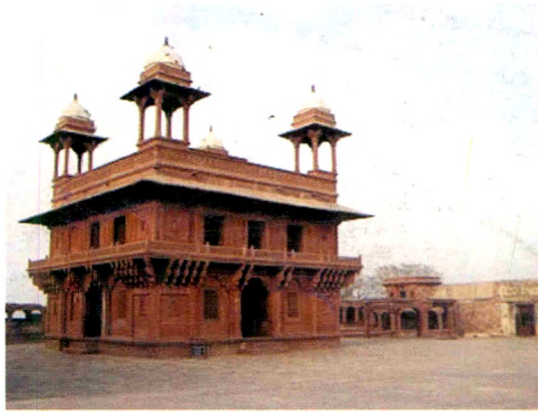
Taj Mahal



Sun temple at Konarak



Kaziranga National park



Fatehpur Sikri



Church at Goa



Stone chariot, Hampi



A Khajuraho temple



Khajuraho temples



Visvanath temple, Khajuraho



Great living Chola temples



Sunderbans National Park



Group of temples at Pttadakal



Entrance to the Elephanta caves



Stupa at Sanchi



Humayun's Tomb



Qutb Minar



Mahabodhi temple, Bodhgaya



Bhimbetka cave



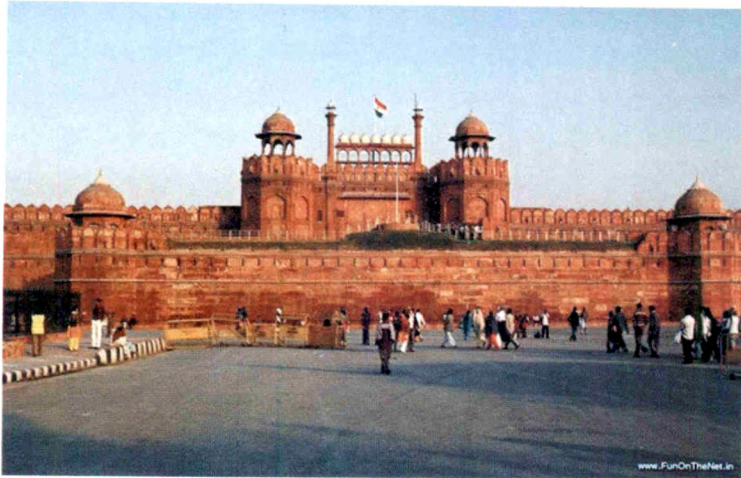
Cave paintings of Bhimbetka



Champaner-Pavagarh Archeological Park



Chatrapati Shivaji Railway Terminus



Red Fort, Delhi



A temple of the Begu lia group,
Burdwan



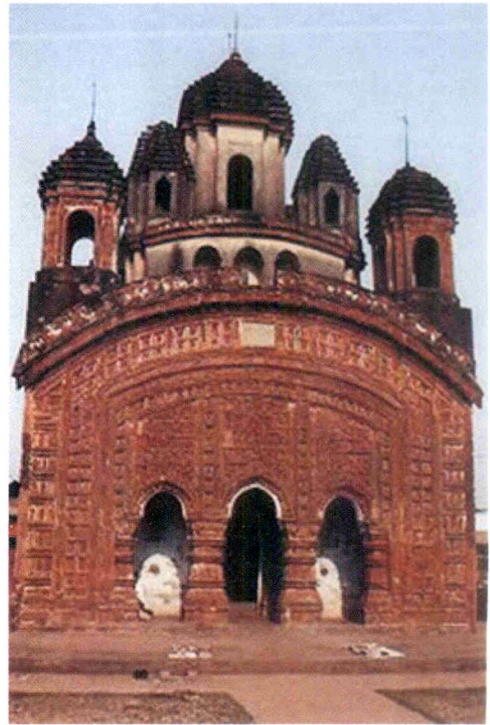
Susunia rock inscription of Chandravarman , Bankura



Temples at Vishnupur, Bankura



Jantar Mantar, Jaipur



Radhavinod temple at Jaydev-Kenduli



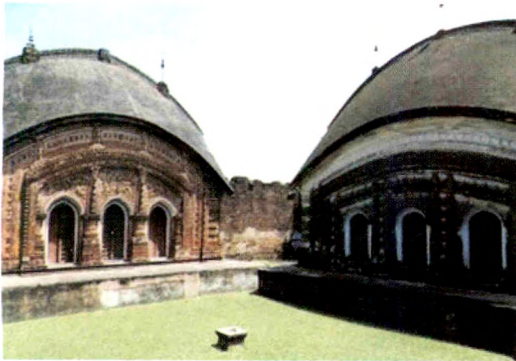
Bandel Church, Hooghly



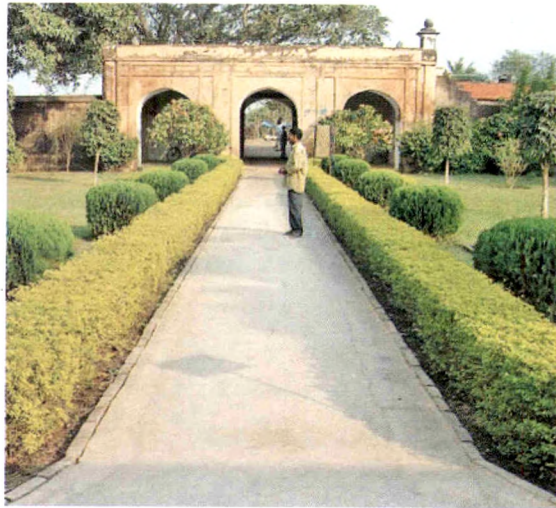
Hamseswari temple, Hooghly



Hazarduari Palace, Murshidabad



Charbangla temple, Murshidabad



Gateway to Royal tomb at Khoshbag



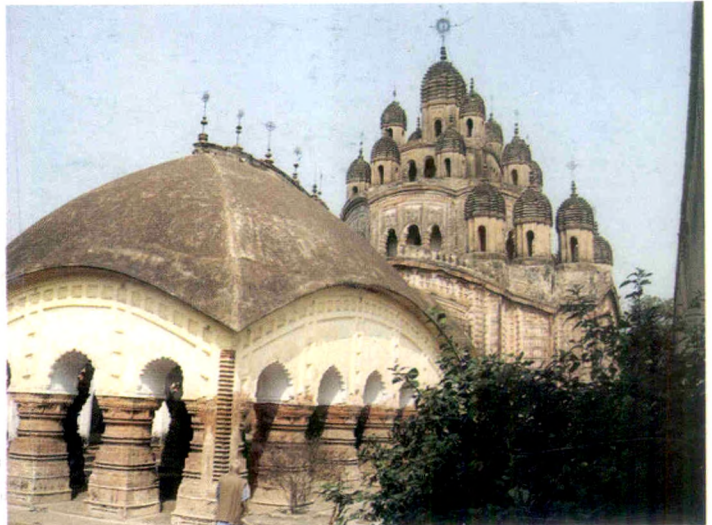
Dakhil Darwaza, Maldah



Adina Mosque, Maldah



Royal Palace, Coochbehar



Laljiu temple, Kalna



St. Paul's Cathedral, Kolkata



Jatar deul, South 24 Parganas



The Marble Palace, Kolkata



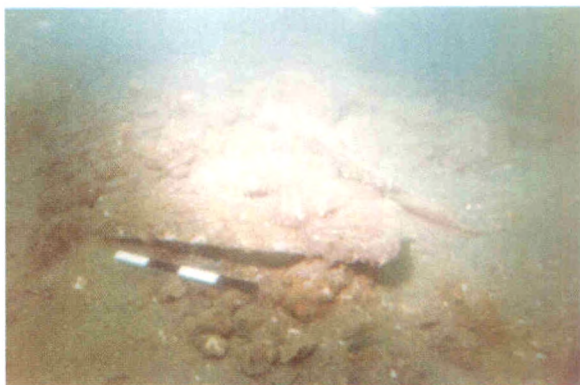
St. John's Church, Kolkata



Underwater heritage at Dwaraka



The *Tajmahal* sunken treasure of silver coins at Sri Lankan sea



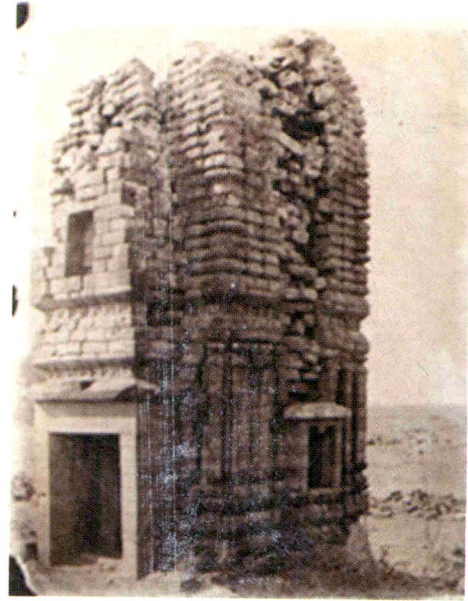
Underwater exploration at Poompuhar



Lion head monument uncovered by tsunami near the Shore Temple at Mahabalipuram



Buddha at Nagarjunikonda



A temple at Telkupi



Nagarjunikonda reservoir



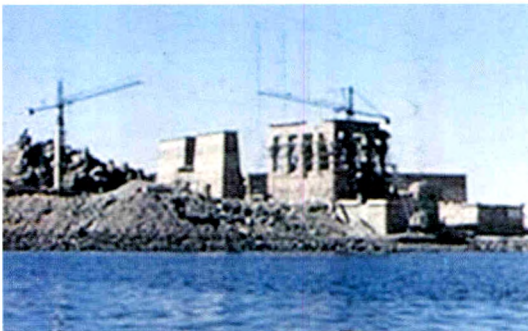
Asvamedha sacrifice site at Nagarjunakonda



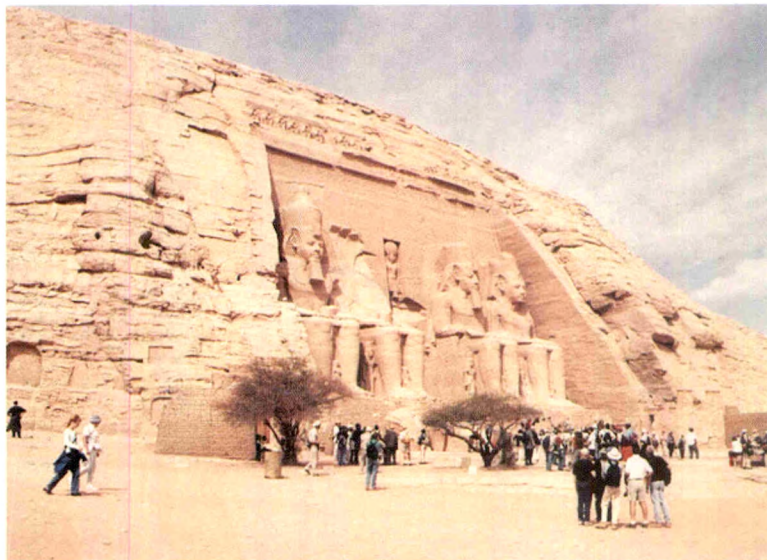
A temple rising above river at Telkupi



Submerged Telkupi temple raising its top



Salvage of antiquities at Nubia



Antiquities recovered from Aswan

